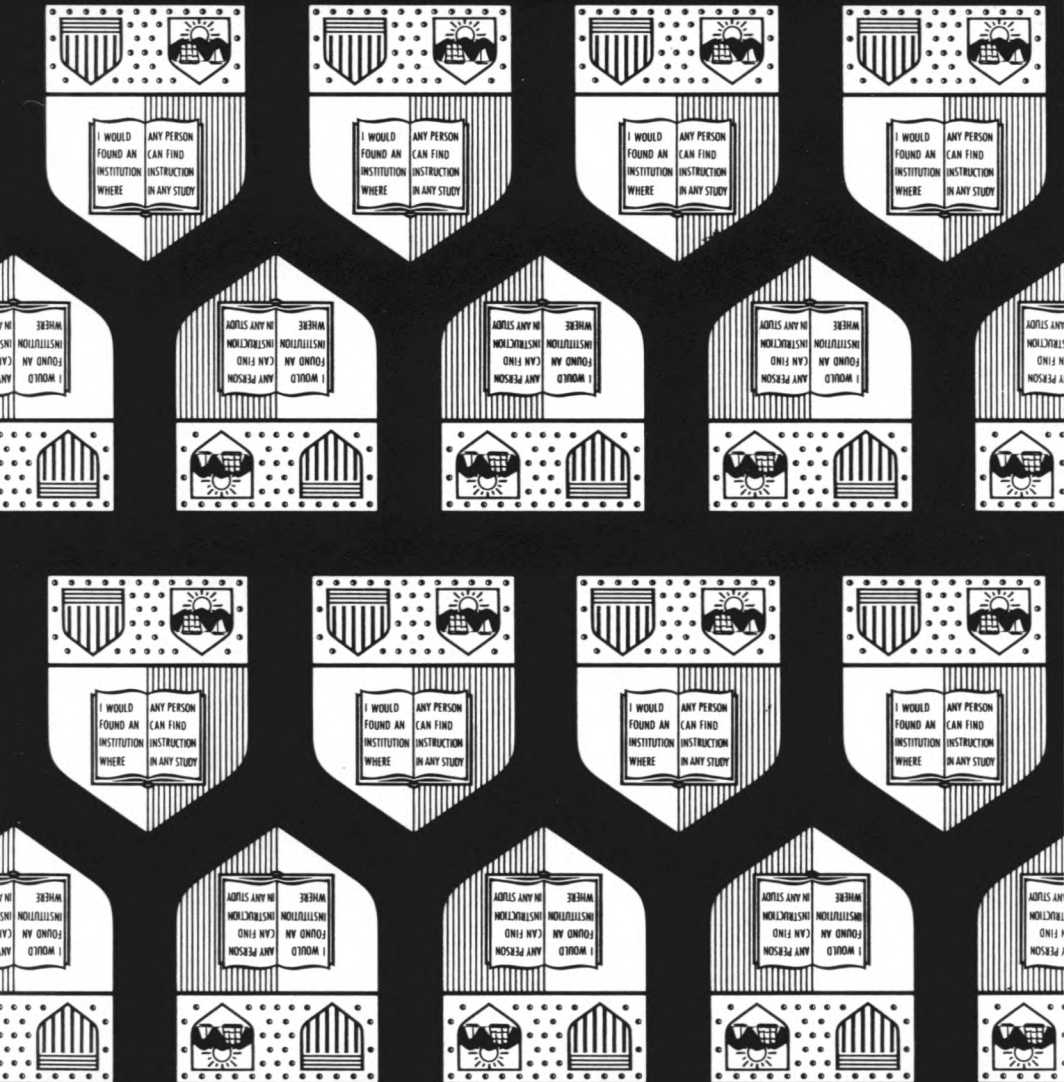
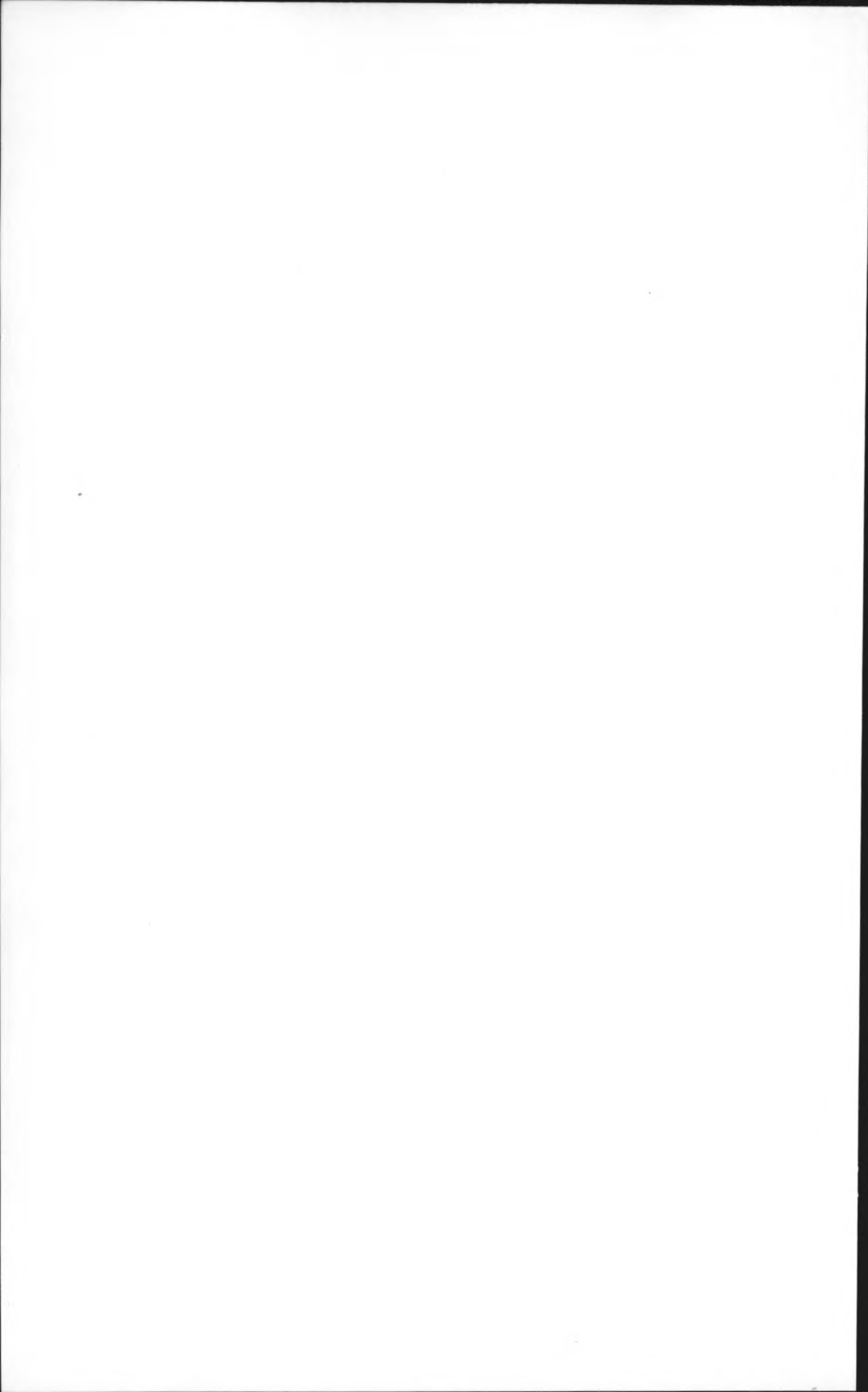


Cornell University Announcements

New York State College of Veterinary Medicine





Cornell University

New York State College of Veterinary Medicine

1980-81

A Statutory College of the State University
at Cornell University, Ithaca, New York

Cornell University Announcements (USPS 132-860)

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Cornell Academic Calendar

1980-81

Registration	Thursday and Friday, August 28 and 29
Fall term instruction begins	Tuesday, September 2
Fall recess:	
Instruction suspended, 1:10 p.m.	Saturday, October 11
Instruction resumed	Wednesday, October 15
Thanksgiving recess:	
Instruction suspended, 1:10 p.m.	Wednesday, November 26
Instruction resumed	Monday, December 1
Fall term instruction ends, 5:00 p.m.	Wednesday, December 10
Final examinations begin	Saturday, December 13
Final examinations end	Monday, December 22
Registration	Thursday and Friday, January 29 and 30
Spring term instruction begins	Monday, February 2
Spring recess:	
Instruction suspended, 1:10 p.m.	Saturday, March 28
Instruction resumed	Monday, April 6
Spring term instruction ends, 1:10 p.m.	Saturday, May 16
Final examinations begin	Tuesday, May 19
Final examinations end	Thursday, May 28
Commencement Day	Sunday, May 31

The dates shown in the academic calendar are subject to change at any time by official action of Cornell University.

In enacting this calendar, the University has scheduled classes on religious holidays. It is the intent of the University that students missing classes due to the observance of religious holidays be given ample opportunity to make up work.

Announcement

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The courses and curricula described in this Announcement, and the teaching personnel listed herein, are subject to change at any time by official action of Cornell University.



SEURMAN HALL
DEPARTMENT OF
VETERINARY MEDICINE

NO
PARKING
ANY
TIME
←→

The College of Veterinary Medicine

History of the College

From the very beginning of the University with the issuance of a charter in 1865, the founder, Ezra Cornell, insisted that a chair of veterinary medicine be established. His experience as an owner of pure-bred livestock had taught him the importance of animal health and he instructed Andrew D. White, the first president, to seek out the best-qualified man to teach courses in veterinary medicine and surgery. It was the first time that veterinary science had been granted equal rank with other sciences in an American university.

President White secured the services of James Law and the appointment was confirmed on August 4, 1868, by the Board of Trustees. A young, well-educated Scotsman, Law had graduated from the Edinburgh Veterinary College, studied under the great medical teachers of the day (William Turner in human anatomy and Joseph Lister in the principles and practice of surgery), and attended veterinary schools on the Continent. He had also taught at the New Veterinary College in Edinburgh and the Albert Veterinary College in London.

When classes began on October 7, 1868, Dr. Law's office was on the second floor of Morrill Hall, the first University building to be completed. A small museum and pharmacy were located in the basement. In Law's words, "Our clinical building was furnished by the campus grass, walled in by the great dome of God's blue sky, and watered and disinfected by the life-giving rays of the sun, and the ozone from hill and dale, lake and forest. We had the common privileges that many a veterinarian has to avail himself of in his daily rural practice."

During the academic year 1869-70 a fairly complete course in veterinary medicine was taught by Professor Law to a class of about twenty. Of this group, four were graduated after four years of study with the Cornell degree of Bachelor of Veterinary Science. Three of these continued in the profession and became nationally distinguished through their accomplishments in disease control.

It was not until March 21, 1894 that the New York State Veterinary College was established at Cornell. It was the first contract college (later to be known

as a statutory college) at Cornell, thereby setting the stage for a long and effective arrangement between the state and the University. A veterinary building (named James Law Hall some years later) was provided by the state and the doors were opened for classes in the autumn of 1896. The school was composed of six faculty of professorial rank, two instructors, and eleven students. Scholastic requirement for entrance was a high school diploma or its equivalent, a rather high standard for those days.

The early faculty recognized the importance of a good library and set this goal as one of their priorities. Governor Roswell P. Flower made a personal donation in 1897 to the library that now bears his name and houses an impressive collection of veterinary resource materials.

The college remained at the original site (at the southeast corner of East Avenue and Tower Road) until the summer of 1957. During that time it had expanded with the construction of a clinical complex along Garden Avenue and a large laboratory building (Moore Laboratory) to house the Department of Bacteriology and Pathology. In addition, the University had provided a large tract of land on Snyder Hill to be used for a research farm.

The present site of the college was occupied in July 1957 and the college has continued to expand in its teaching, research, and service to the people of the state. The present on-campus facilities occupy about twenty acres, with ancillary facilities on Snyder Hill and elsewhere. The latest additions are the eight-story Research Tower, dedicated June 27, 1974, and the Diagnostic Laboratory, dedicated October 17, 1978.

Expansion is a continuing process at the New York State College of Veterinary Medicine as it seeks to provide practitioners, scientists, and teachers for the future welfare of animals and man.

The New York State College of Veterinary Medicine is located along Route 366 at the eastern edge of the campus of Cornell University at Ithaca, a city of approximately 30,000 permanent residents, situated in the famous Finger Lakes region of New York at the head of Cayuga Lake. The city is in the south-central part of the state about 260 miles

northwest of New York City and 50 miles south of Syracuse.

The College Library

The library, endowed by a gift from Roswell P. Flower, governor of New York when the college was founded, is named the Flower Veterinary Library in his honor. It is maintained partly by endowment funds and partly by appropriations from the state. The library is on the second floor of Schurman Hall. The large reading room, seating seventy, has display shelves for current journals and areas of indexes, abstracts, and other reference books. The three levels of adjoining stacks include journals and monographs and are open for use. Individual study carrels are also available.

The library contains over 66,000 volumes and regularly receives about 1,000 periodicals and series titles. This represents a worldwide selection of veterinary titles plus titles in the biomedical sciences designed to support undergraduate, graduate, and research programs. Through the various libraries on the campus about 4 million volumes and more than 50,000 journals and serials are available to students. These collections, interlibrary loans, and photo-duplicated materials supplement the research potential of the veterinary library, which is rich in historical and basic research resources as well as recent monographs and selected government publications. A bimonthly newsletter is issued listing recent acquisitions.

Information on regulations and suggestions for the use of the library are provided to new students and faculty. Additional instruction in bibliographic research is available for advanced problems.

A bibliographic retrieval service located in Mann Library provides ready access to extensive computerized medical and biomedical data bases.

Research Facilities

Facilities for research are constantly expanding. In addition to on-campus facilities, laboratories for research on infectious, parasitic, and metabolic diseases have been constructed on Snyder Hill, about three miles from the campus, on a tract of 133 acres. In this same area, for the study of reproductive diseases of dairy cattle, one hundred heifers and thirty bulls are housed in available facilities.

Besides the many buildings for housing animals, most of which have small pastures, exercise lots, or paddocks, a number of laboratory buildings have been built for professional staff members stationed there for research. Most recent additions include a laboratory for the study of leukemia, financed by the National Cancer Institute, a large animal isolation facility, and a dog quarantine building.

Feline Research Laboratory

On February 12, 1974, the Board of Trustees of Cornell University approved the formation of the

Cornell Feline Research Laboratory as a unit of the New York State College of Veterinary Medicine. This formalized a program started in 1964 to study the infectious diseases of the cat, and expanded this program to study not only infectious diseases, but all diseases that pose a significant threat to the health of cats.

The purposes of the Cornell Feline Research Laboratory are: (1) to promote and conduct research on diseases of the domestic cat in order to prevent or cure these diseases, (2) to provide continuing education on feline diseases to feline practitioners and cat owners, and (3) to aid feline practitioners when new or unknown diseases occur.

The Cornell Feline Research Laboratory is composed of a director and a group of faculty, graduate research assistants, and staff from several departments within the New York State College of Veterinary Medicine who have a keen interest in understanding, preventing, and curing diseases of the cat. Each investigator conducts independent research in his or her area of expertise, with collaborative help from investigators in whatever other area of expertise is needed. This multidisciplinary research may involve investigators from clinical medicine to the most basic sciences in order to solve a particular disease problem.

Poultry Disease and Aquatic Animal Disease Research

Poultry disease research is done on the campus in conjunction with the diagnostic and teaching laboratory and at the P. Philip Levine Laboratory on Snyder Hill about three miles from the campus. A forty-one unit disease isolation building forms part of the facilities on the campus; these units are used for studies on chickens, pet birds, and other avian species and on shellfish. The facilities at Levine Laboratory consist of a two-story building, well equipped for research in the bacterial, viral, and parasitic diseases of chickens and turkeys.

A disease-free flock of chickens is maintained for the production of chicks and embryos. There are twenty-eight separate pens for holding experimental birds on a tract of land of several acres.

A duck disease research laboratory with excellent equipment is maintained at Eastport, Long Island, with the cooperation of the Long Island Duck Research Cooperative.

Diagnosis

The College of Veterinary Medicine maintains and staffs regional veterinary laboratories for poultry disease diagnosis at Ithaca, Kingston, and Eastport. The latter is combined with the Duck Research Laboratory. These diagnostic facilities serve the poultry industry needs in the surrounding area. Their staffs provide extension services and assist in the collection of materials and cases required for research in Ithaca.

A laboratory for diagnosis of aquatic animal diseases is also maintained at the college itself. It serves the fin-fish and shellfish industries and provides a source of materials required for teaching and research.

New York State Mastitis Control Program

This program, a part of the Department of Clinical Sciences, has three primary concerns: (1) teaching, (2) consultation and diagnostic services to the practitioner and dairyman, and (3) field research on mastitis control. Five diagnostic laboratories, located in dairy areas of the state, are operated within the program.

Dr. L. A. Wager, program director, also acts in the capacity of field veterinarian at the Canton laboratory. Veterinarians and dairymen in eight northern New York counties with a cow population of approximately 130,000 are served by this laboratory.

Dr. G. L. Hayes is field veterinarian at the Earlville laboratory, which offers service in ten central-eastern counties with a cow population of approximately 257,000.

Dr. J. F. Cone is field veterinarian at the Kingston laboratory, which serves the nineteen eastern counties of New York with an estimated cow population of 134,000.

Dr. G. W. Sellick is field veterinarian at the Springville laboratory, which serves an eleven-county area in western New York with a cow population approximating 192,000.

Dr. W. E. Linquist, supervising veterinarian, also acts in the capacity of field veterinarian for the central laboratory located at the New York State College of

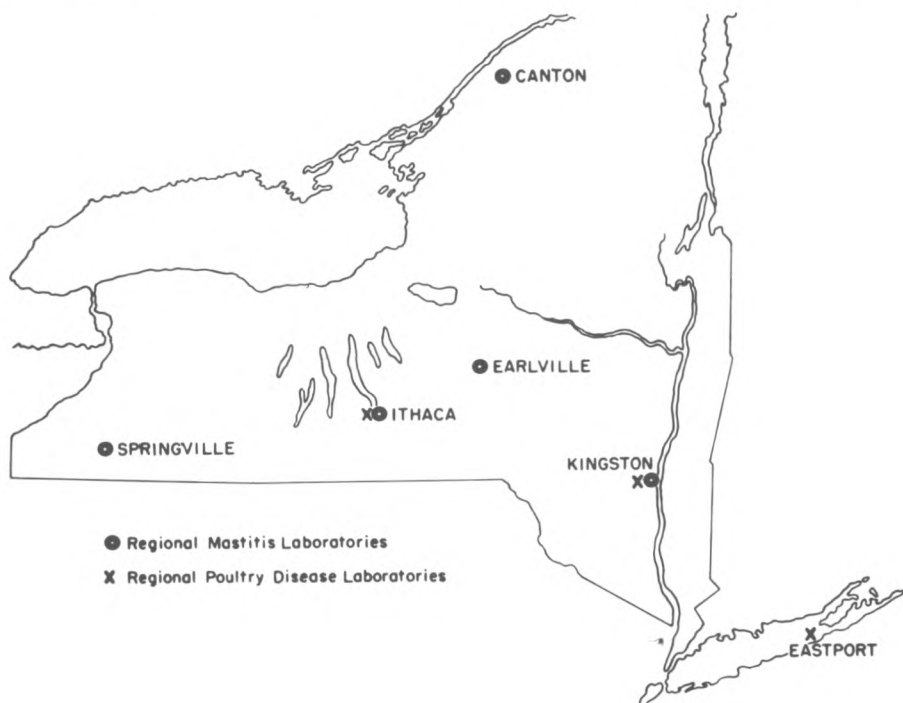
Veterinary Medicine at Ithaca. At this laboratory, student training and research programs are conducted in addition to the diagnostic services provided for the eleven counties of central New York, which have approximately 134,000 cows.

All laboratories participate in research on basic and practical aspects of mastitis prevention, often in cooperation with the Mastitis Research Sections of the College of Veterinary Medicine and the College of Agriculture and Life Sciences.

James A. Baker Institute for Animal Health

In September 1950, the Board of Trustees of Cornell University established a new unit in New York State College of Veterinary Medicine: The Veterinary Virus Research Institute. Formation of the Cornell Research Laboratory for Disease of Dogs was approved as a section of the institute. In September 1975, the name of the institute was changed to the James A. Baker Institute for Animal Health.

The primary objective of the institute is to prevent loss from infectious diseases in animals. Toward this end, basic research is conducted upon organisms that cause disease in order to increase knowledge of their nature, means of spread, and methods whereby their spread can be controlled. Another objective of the institute is advanced training of workers in the fields of immunology and virology. Depending upon the amount of laboratory space available, a limited



number of graduate students and postgraduate visiting investigators are accepted.

After consideration of the many technical difficulties involved in work with viruses and other living organisms that may be airborne or transferred accidentally in other ways, a building complex was begun in 1950 and has been expanded from time to time. In this complex are twelve modern and fully equipped laboratories designed specifically for research and graduate teaching of virology, immunology, nutrition, biochemistry, and electron microscopy as well as a library, offices, and a tissue culture laboratory. There are twenty-six animal isolation units constructed to avoid unplanned infections. Specific pathogen-free animals are produced in separate animal buildings.

Muenschner Poisonous Plants Garden

Located north of the James Law Auditorium, this living collection of poisonous plants includes most of those found in the Northeast, and some from other parts of North America. It is maintained by the College of Veterinary Medicine in cooperation with the New York State College of Agriculture and Life Sciences and Cornell Plantations. Each specimen is labeled with its scientific name, its common name, and the name of the plant family to which it belongs. The garden is open to visitors year-round.

Clinical Facilities

A teaching hospital consisting of clinical facilities for both large and small animals is located adjacent to the research and preclinical teaching facilities. The hospital comprises numerous clinical services that draw upon the experience and skill of the clinical faculty and the proficiency of research specialists in their specific areas of competence. Specialty sections within the clinical services move freely throughout the hospital to extend the best standard of care available to patients while exposing students to the combined appraisal of the teaching staff. An ambulatory service provides patient care on farms in the surrounding territory.

Clinical Nutrition Program

In 1972 an agreement was signed between Cornell University and the Mark L. Morris family for the establishment of (1) a position entitled the Mark L. Morris Professorship of Clinical Nutrition and (2) a teaching and research program in veterinary clinical nutrition, to be located in the New York State College of Veterinary Medicine. The Clinical Nutrition Program is currently composed of the Mark L. Morris Professor of Clinical Nutrition, other collaborative faculty members, one laboratory technician, and one graduate research assistant. The teaching program includes a two-credit core course in clinical nutrition and exposure of students to clinical cases of nutritional importance during seminars, rounds, etc. Research activities in both large and small animal clinical nutrition are included in this program, as well as activities in extension and continuing education. A consulting service for nutritional problems is also available.

Admission to the College

Admission Policy

The Faculty Committee on Admissions endeavors to select the best-qualified applicants who, in its judgement, will be most able to successfully complete the veterinary medical curriculum and become competent, responsible veterinarians. Class size is limited to eighty students and each year there are many more qualified applicants than the college is able to accommodate. Although the largest percentage of students admitted are residents of New York State, a limited number of well-qualified out-of-state applicants are also accepted. Candidates who feel their qualifications are outstanding are encouraged to apply, regardless of residency.

It is the policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age, or handicap. The University is committed to the maintenance of affirmative action programs which assure the continuation of such equality of opportunity.

Selection Criteria

In conducting its evaluation the committee is guided by the following criteria for determining the best qualified of many qualified applicants. No single criterion dominates, since the faculty members look at the whole person.

Academic Achievement and Aptitude

The need for learning large amounts of factual material means that successful applicants must have demonstrated achievement and potential for comprehension of scientific materials and an ability to solve complex problems. This ability is evaluated by examination of the candidate's grades in prerequisite courses, by examination of all college-level courses taken, and by consideration of the Graduate Record Examination scores.

Quality of the Preparatory Program

Since the curriculum leading to the D.V.M. degree is academically rigorous, the committee takes into consideration the quality of the academic program presented by the candidate for admission. Such things as the variety and balance of courses taken, the difficulty of courses selected, and the ability to carry a heavy academic course load at a demanding institution are taken into account. Ideally, the applicant should have achieved excellence in a broad range of physical and biological sciences, social sciences, and the humanities. As no preference is given to applicants majoring in any particular field, the choice of a major is left to the individual and should be determined by the applicant's alternate career goals. Experience in teaching or research in basic sciences

or areas indirectly related to human or veterinary medicine is considered in the evaluation.

Experience, Knowledge, and Achievement in Matters Relating to Animals and the Veterinary Profession

Veterinary medicine is an animal-oriented profession. Therefore, an applicant's experience in working with animals and an understanding of the veterinary profession are viewed by the admissions committee as important considerations in the selection process. Such experience could involve breeding, rearing, feeding and showing various kinds of animals including companion animals, livestock, laboratory animals, zoo animals, or wildlife.

The applicant should be prepared to present evidence of hands-on experience with animals and sufficient contact with the veterinary profession so that the admissions committee can determine that the applicant has some understanding of the duties and responsibilities of a practitioner and the scope of veterinary medicine.

Experience, Knowledge, and Achievement in Activities Unrelated to Veterinary Medicine

The well-rounded candidate can demonstrate significant achievements outside of academic and veterinary-oriented activities. Therefore, the committee evaluates the depth and breadth of accomplishment in extracurricular activities, community services, hobbies, and nonacademic interests of all kinds.

Personal Characteristics

The committee endeavors to select candidates of integrity, reliability, maturity, and determination. It is important that professionals possess excellent oral and written communication skills, poise, leadership ability, and a talent for getting along with others. Therefore, these and other characteristics possessed by the candidate are evaluated.

Academic Preparation

Admission to the New York State College of Veterinary Medicine normally requires a minimum of three years preparation in an accredited college or university. This preparation does not have to be completed in a specialized college or in a designated preveterinary program. Potential candidates should enroll in an undergraduate institution with a reputation for academic excellence that offers the prerequisite courses as part of an accredited baccalaureate program. Because of the limitations in class size and the competition for admission, every candidate should make plans for an alternate career. The best preparation for the study of veterinary medicine is to fulfill all entrance requirements while attaining a well-rounded college education that includes preparation for an alternate career and completion of prerequisite courses.

The minimum course requirements for admission are shown in the following table.

	Semester Credits	Quarter Credits
English composition*	6	9
Biology or zoology (with laboratory)	6	9
Inorganic chemistry (with laboratory)	6	9
Organic chemistry (with laboratory)	6	9
Biochemistry	4	6
Physics (with laboratory)	6	9
General microbiology (with laboratory)	3	4.5

* One half of this requirement may be satisfied with an oral communication course.

All prerequisite courses, with the possible exception of microbiology and/or biochemistry, must be completed and documented with a letter grade at the time of application. A letter grade of C- or better is considered satisfactory in a prerequisite course. Evidence of satisfactory completion of all prerequisite courses must be presented by August 1 prior to matriculation.

Applicants must present evidence of sound training in biology, physics, and chemistry, including an upper-level biochemistry course that requires organic chemistry as a prerequisite. This should be a complete course in general biochemistry. Half of a two-semester sequence does not provide a balanced background. A total of sixteen semester credits (24 quarter credits) of chemistry is required. Some latitude is acceptable with respect to the distribution of credit hours within this total. If a course substitution is requested, the applicant should submit to the Office of Admissions a current, detailed course description, which discusses the text used, course objectives, materials covered, and credits offered.

The microbiology prerequisite must include an introduction to the major groups and natural distribution of microorganisms, taxonomy, and terminology. Lecture materials should cover size, morphology, and structure of bacteria and fungi; bacterial motility, sporulation, physiology, growth curve, genetics, and multiplication; bacteriophage. The applicant should have knowledge of sterilization and disinfectants; environmental mycology and bacteriology with regard to water, soil, foods, milk, sewage, and animal wastes. The microbiology laboratory should develop skills in the use of the microscope in microbiology; in the preparation of smears and in staining procedures for bacteria; interpretation of motility; use of liquid- and solid-culture media, sterilization, inoculation and streaking techniques, interpretation of mixed growth, and colonial morphology; recognition of staining and morphological characteristics of representative bacteria, counting techniques, dilutions and pipetting of bacterial suspensions, and bacterial counts of water and milk. Recognition and identification of common environmental and saprophytic bacteria and microbiology of skin, milk, water, sewage, and animal wastes must be included in preparatory course work.

Applicants should be proficient in written and spoken English. Deficiencies in fundamental communication skills hamper professional development in a rigorous, scientific discipline. Although not

10 Admission to the College

required, courses in mathematics and statistics may provide a useful background for the applicant.

Official transcripts documenting all courses taken must be submitted to the admissions office as part of the application. Prerequisite courses with grades of less than C- will not fulfill the prerequisite requirement for that course but will be included in the computation of the cumulative prerequisite grade point average along with those courses that have been repeated. The Office of Admissions, in its evaluation of academic work, will determine which courses may be used to fulfill the prerequisite requirements.

Grades, although not the sole criterion for admission, are considered to be reliable indicators of academic motivation and aptitude. We expect applicants to have a minimum of a 3.0 (on a 4.0 scale) cumulative grade point average and a minimum of a 3.0 prerequisite grade point average. Accepted applicants generally have excellent academic records and grade point averages well above 3.0. Since it is impossible to evaluate honors, pass-fail, or S-U grading systems, it is necessary for the candidate to obtain a letter grade for all the prerequisite courses and to have these grades certified by the registrar at the applicant's undergraduate institution. A limited number of advanced-placement credit hours may be accepted at the discretion of the Faculty Admissions Committee and the Office of Admissions, if they appear on the official transcript. In such cases, applicants should provide detailed information from the undergraduate college describing the advanced-placement policy of that college.

Application Procedures

Application forms and detailed information can be obtained by writing to the Office of Admissions. Application materials will be ready for distribution in August of the year preceding possible matriculation. The complete application material, application fee, and supporting documents must be submitted to the Office of Admissions by *October 15*.

Essays

Essay on motivation for veterinary medicine. Each applicant is required to submit a paper that discusses those factors in his or her development and philosophy that would help the committee understand his or her motivation for a career in veterinary medicine. This essay must be typewritten, double-spaced, and no more than three pages long.

Essay about animal experience. Each applicant must submit a two-page, double-spaced, typewritten summary of his or her work experience with animals.

Letters of evaluation and recommendation. Forms for these letters are provided in the application packet.

Employer evaluations. An employer evaluation form is to be completed by each employer with whom the applicant worked to fulfill the animal experience requirement.

Adviser evaluation. A recommendation from the applicant's faculty adviser is required. Evaluations compiled by advisory committees are also acceptable. If you feel that your adviser does not know you well enough to write an in-depth evaluation, you have the option of submitting a supplemental academic evaluation *in addition* to the adviser's evaluation. This supplemental academic evaluation should be filled out by a faculty member whom you feel is well informed about your qualifications.

Personal letters of recommendation. Applicants are required to have two letters of recommendation submitted from persons they know well who can cite their specific qualifications. No more than two letters of this type will be considered for either reapplicants or first-time applicants.

Graduate Record Examination

The Graduate Record Examination (GRE) aptitude test is required of all applicants. The GRE must be taken no later than October of the year before desired matriculation. Scores from examinations taken more than five years before the application deadline will not be considered.

The GRE is administered by the Educational Testing Service, Box 955, Princeton, New Jersey 08540. Results of the examination will be reported to the college if the institution code R 2549-4, New York State College of Veterinary Medicine, is properly entered on the test forms.

The desirable minimum score for the aptitude portion (verbal and quantitative) is 1200. The advanced biology test or other advanced tests are not required but may be included. The college does not as yet use the results of the analytical portion of the GRE.

Counseling

Because of the large number of aspiring students, formal individual preapplication counseling sessions normally cannot be granted. You should, however, consult your campus health careers adviser, who may be able to offer special counsel. Group information sessions and college tours are given at 9:00 a.m. on the first Saturday of each month of the school year (September through May). For further information call 607/256-7633.

Reapplication

If a previously denied applicant desires to reapply, he or she should follow the same process described above with only slight modification. Previous applications are retained for three years after the date of the last application. Reapplication will require new forms, the application fee, and a completely new personal essay as described earlier. This essay must include developments the reapplicant believes have strengthened his or her candidacy. Previous essays will not be reviewed. All personal reports and other documents should be dated and signed.

It is the responsibility of the applicant to ensure that the college is provided with current information to

supplement that submitted with any previous application. Reapplicants are not required to retake the GRE, but if that is done, the Faculty Admissions Committee will use whatever higher combination of scores is higher.

Advanced Standing

Applicants for admission with advanced standing as members of the second- or third-year class must present educational qualifications and professional accomplishments similar to those expected of students who have completed the previous year's courses here. Unless attending one of the schools or colleges of veterinary medicine accredited by the American Veterinary Medical Association, applicants must satisfactorily pass examinations in all of the work for which they desire advanced credit. No one will be admitted to any advanced class except at the beginning of the college year in September. The candidate must file a formal application and must be interviewed by the admissions committee and possibly by other faculty members. Places for admission with advanced standing are limited and depend on vacancies occurring in that particular class.

It is imperative that the admissions committee have detailed and translated summaries of veterinary medical academic programs and accomplishments for those seeking advanced placement from schools in foreign countries. Advanced standing applications are normally considered during the summer months before desired matriculation, but applications should be on file and completed as early as possible and not later than April 15.

Further Information

Additional questions about admissions can be directed to the Office of Admissions, C107 Schurman Hall, Cornell University, Ithaca, New York 14853.

University Requirements

Candidates accepted for admission are required to pay a registration fee and will be notified of the amount and the due date at the time of acceptance. No refunds will be made to applicants who withdraw after the due date of the fee.

Entering students must also fulfill the health requirements adopted by the Board of Trustees of Cornell University before being allowed to register.

Combined Courses

Through a program of double registration, it is possible for D.V.M. students who did their preveterinary work in the College of Agriculture and Life Sciences at Cornell University and who were accepted after their third year of undergraduate study to complete their B.S. degree while working on the D.V.M. degree. Students interested in this program should consult their undergraduate faculty advisers.

Admission to the Graduate School

Graduates of the veterinary college or other colleges may enter the Graduate School of Cornell University and pursue work for the degree of M.S., Ph.D., or D.Sc. in Veterinary Medicine in the College of Veterinary Medicine and allied departments of the University.

Students already accepted in the D.V.M. program also have the opportunity to apply for combined degree programs. The D.V.M.-M.S. program enables a veterinary student, through summer registration in the Graduate School, to obtain an M.S. at the end of the summer following his or her senior year. Summer stipends are paid and summer tuition is waived in this program.

The D.V.M.-Ph.D. program is designed for students with excellent academic records who have shown an interest in and commitment to research and teaching. This integrated program enables an incoming veterinary student to obtain both the D.V.M. and Ph.D. degrees in six years.

Further information on all of these programs may be obtained by writing to Dr. Neil Norcross, Graduate Faculty Representative, New York State College of Veterinary Medicine, Ithaca, New York 14853.

Application for admission must be made to the Graduate School, Sage Graduate Center, Cornell University. Applications for fall term or summer admission will be received until March 1; applications for spring term admission will be received until October 1.

All applicants to the graduate Field of Veterinary Medicine should submit results of the Graduate Record Examinations Aptitude Test taken during the past four years. Scores of an advanced test are also desirable.

The College of Veterinary Medicine, alone or in combination with other departments of the University, offers advanced students excellent opportunities for study and investigation. Its situation gives it abundant and varied material for research and it has ample research facilities. It encourages graduate and advanced students to pursue independent investigations. Courses of study especially adapted to advanced work and research will be found among those listed in pp. 23-47 of this Announcement.

A student who holds the degree of Doctor of Veterinary Medicine from a recognized college or school in the United States or Canada may transfer one year's residence credit for that work toward the Doctor of Philosophy degree whenever the student's Special Committee certifies that the work done in the years of professional study formed an integral part of the work required for the doctorate and was of equivalent quality.

Doctor of Science in Veterinary Medicine

Admission to candidacy for the degree of Doctor of Science in Veterinary Medicine (D.Sc. in V.M.) is



a function of the Field of Veterinary Medicine of the Graduate School. The following requirements must be met before admission to candidacy:

- 1) The candidate must have been graduated for at least five years from an approved school of veterinary medicine.
- 2) The candidate must have demonstrated, by published papers, the ability to do independent meritorious research.

Candidates who have no graduate credit beyond their D.V.M. degree must complete not less than four residence units to qualify for the degree. It is considered that at least two units of work leading to the degree of Doctor of Veterinary Medicine are an integral part of this professional degree. Those who have a Master of Science degree or its equivalent from an approved college or university may complete the minimum residence credit by acquiring at least two additional units.

After a candidate has been admitted, he or she will select a member of the faculty in veterinary medicine to serve as chairperson of the Special Committee. The faculty of the field then will select two other members of the committee. These three individuals will have charge of the candidate's program and will be responsible to the faculty of the field for supervising the candidate's work, which must fall in the following categories:

- 1) Advanced courses in any of the sciences that have a relation to medicine. Selected courses that are part of the regular curriculum of the Cornell University Medical College may be accepted for not more than half of the total credit in this category. In no case will credit be granted for courses that are part of the regular curriculum in veterinary medicine or for similar courses in the Medical College.
- 2) Regular attendance and study in any of the clinics of the College of Veterinary Medicine or of the Medical College.

All candidates must have at least two-thirds of their work in courses that can properly be included under category 1. If desired, they may take all their work in category 1. Not more than one-third of their work may be taken in category 2.

Courses will be deemed satisfactorily completed only upon receipt of a regular transcript of credits. Following completion of course work, each candidate for this degree must present an acceptable monograph or thesis in the area of special interest and must submit to a general examination covering the subject matter of his or her work. The Special Committee will set the time and place of the examination and invite all members of the field and the graduate faculty of other fields who have participated in the student's training to attend. They have the right to examine the candidate and express to the Special Committee their opinions of the candidate's competence, but only the Special Committee has the responsibility for recommending the student for the degree. The recommendation is addressed to the faculty of the Field of Veterinary Medicine of the Graduate School, which then makes recommendations to the Graduate School.

Finances

Tuition and fees for Doctor of Veterinary Medicine degree candidates are \$4,250 a year for New York State residents and \$6,000 a year for nonresidents. Most students in the college do not live in University housing. The cost of room and board in Ithaca for 1980-81 is estimated at \$2,940. Books, instruments, and supplies cost approximately \$400 a year. An additional allowance of \$1,100 should be made for clothing, laundry, local transportation, entertainment, and incidentals. These estimates are based on standard budget figures provided by the University Office of Financial Aid for the purpose of allocating funds and budgeting for financial aid. Individual expenditures may exceed these figures, depending on personal preferences in housing, transportation, dining, etc.

Students who want to pay tuition in monthly installments should contact Academic Management Services, Inc. by telephoning 800/556-6684, a toll-free number. Subscribers to the service pay a \$35 fee.

The Announcement of Academic Information describes University policies; student services; fee schedules; payment procedures; fines, penalties, and routes of appeal; and extracurricular activities.

Refund Policies

Part of the amount personally paid for tuition will be refunded if the student obtains an official certificate of Leave of Absence or Withdrawal at the office of the dean or director of the academic division involved. Students who terminate their registration in the University during a regular term in this manner will be charged tuition from the registration day to the effective date of the certificate as follows: first week, 10 percent; second week, 20 percent; third week, 30 percent; fourth week, 40 percent; fifth week, 60 percent; sixth week, 80 percent; seventh week, 100 percent; except that no charge will be made if the effective date is within the first six days, including registration day.

The University makes available tuition insurance which provides refunds in event of leave of absence or withdrawal for medical or emotional reasons. Complete details regarding this coverage and applications accompany the August tuition bill.

The \$25 application fee for University residence halls is nonrefundable except when lack of space prevents the offer of a room assignment. The \$100 security deposit which guarantees a contract for a room in the residence halls is refundable, less damage charges, upon fulfillment of the contract.

Students participating in a prepaid dining plan who withdraw from the plan during a semester are eligible for a prorated refund based on the number of days the contract was in effect.

Financial Aid

Information and guidance regarding financial aid for veterinary students is available from the college

Financial Aid Office. A description of the methods, procedures, calendar, resources and policies can be found in the college publication *Financial Aid 1980-81*. This brochure is updated annually. Although grants and scholarships are not abundant, all of the demonstrated needs of students presently enrolled have been met. Approximately 85 percent of the financial aid available for the coming year will be through programs such as Health Professions student loans, National Direct Student Loans, Guaranteed Student Loans, and the College Work Study Program. The college's policy of support is based upon the assumption that parents and spouses are willing to help finance the education of their children or spouses to the extent possible.

To standardize procedures and provide uniform criteria for estimating family financial strength, the college uses the Graduate and Professional School Financial Aid Service (GAPSFAS) and federal income tax information. The college Office of Financial Aid makes individual need analysis, and available aid is recommended accordingly. Financial aid packages prepared by the college Financial Aid Office combine loans, employment, and gifts or grants.

A veterinary student who desires financial aid should request a GAPSFAS application form from the college and must complete it by March 1 for aid beginning the following autumn. Applicants interviewed for admission to the first-year class will receive GAPSFAS forms when interviewed. Application for financial aid does not affect the admissions evaluation process.

Residents of New York State who qualify for the Tuition Assistance Program (TAP) awards must apply each year to the New York State Higher Educational Services Corporation, Tower Building, Empire State Plaza, Albany, New York 12255. Applications should be submitted in early summer; the deadline is March 31 of the academic award year.

Loan Funds

Sources for loans to veterinary students are as follows: The Cornell Veterinary Alumni Association; the New York State Veterinary Medical Society; the Family of David E. Wright '12; the Dean W. A. Hagen Fund; National Association of Federal Veterinarians Emergency Loan Fund; Student Emergency Loan Fund of the Women's Auxiliary to the New York State Veterinary Medical Society; the Charles H. Webster Veterinary Fund; the Joseph Brender Student Loan Fund, the Omega Tau Sigma Fraternity Loan Fund; the Health Professions Loan Program; National Direct Student Loans; New York State Higher Education Services Corporation (similar services are available to residents of most states); and certain other funds administered by Cornell University. Most guaranteed loans defer interest or principal payments until the student has left school. Interest rates vary according to source of the loan, and certain short-term loans are interest free.

Guaranteed student loans are also available through two programs which provide partial or no interest subsidy; New York Supplemental Loan Program for students in medicine, dentistry, and veterinary medicine;

and the Health Education Assistance Loan (HEAL) program of the United States Office of Education, Department of Health, Education and Welfare.

Scholarships for Veterinary Students

Veterinary students may receive help from various scholarship funds throughout the four-year course of study. The nature and extent of such assistance depends upon scholastic achievements, specific criteria established by each benefactor, and recommendations of the appropriate college committees. Application procedures are outlined in announcements that are posted and distributed to each student. Committee evaluations and recommendations are completed at the end of spring semester. Scholarship stipends are handled by the University treasurer and credited to the students' academic charges during the following year. Students interested in securing other forms of financial assistance should contact the college director of financial aid.

Numerous prizes are also available for veterinary students and are subject to conditions listed under each award. Many of the prizes, awards, and scholarships were established with endowments, so that the income distributed and number of awards may vary from year to year.

Albany Kennel Club Scholarship. This scholarship is awarded by a New York State resident who by character, achievement, and financial need is a worthy recipient. It is given as a mark of respect for the New York State College of Veterinary Medicine which has contributed so substantially to the well being of our four-footed friends.

Allen Products Company Scholarships. Three scholarships of \$4,000 each (\$1,000 per year) are available. The scholarships are awarded to incoming veterinary students on the basis of financial need, scholastic potential, and overall excellence of character. Continuation of the awards beyond the first award year is contingent upon maintenance of scholastic performance and continued financial need, as determined by the Committee on Scholarships. Recipients must apply for continuation of the award on an annual basis.

Amian Foundation Scholarship. An annual award, established in 1980 by the Amian Foundation, in recognition of the special attributes, pleasures, and rewards from associations in the equine area. The scholarship is awarded to a student entering the third year of veterinary studies who demonstrates a very special interest in standardbred horses and has shown creditable academic performance and leadership in addition to financial need.

The Joseph Brender Student Aid Fund. Established by friends of Joseph Brender, this memorial loan/scholarship fund provides income for an annual scholarship award to veterinary students, with preference given to ethnic minority students.

Harriet G. Bird Memorial Scholarship. Established by the Merwin Memorial Free Clinic for Animals, Inc.,

for Massachusetts residents. The award is based primarily on the financial need of applicants who maintain satisfactory academic performance.

Charlie and Chico Memorial Scholarship. An award dedicated to the memory of two faithful companion dogs established by Mr. and Mrs. Alfred Morra in 1979. The scholarship is designated for a veterinary student who is from Connecticut or the New England area. It is to be given to a student who exhibits special care and concerns for small animals, who has definite financial need and maintains creditable academic performance.

Eastern Milk Producers Cooperative Scholarship. The purpose of this scholarship is to assist a worthy student in the college of Veterinary Medicine, with preference to be given to sons or daughters of members of the Eastern Milk Producers Cooperative Association. The student must have an established need for financial assistance and show evidence of outstanding character and leadership ability.

Priscilla Maxwell Endicott Scholarship. This endowed scholarship was established in 1977 in honor of Niel W. Pieper, D.V.M. 1932. The income is to be used primarily for support of Connecticut students in the college. It is awarded on the basis of creditable academic performance, personal attributes, and financial need. If the scholarship is not needed for Connecticut students it may be used for students from other New England states.

Irene Heinz Given and John LaPorte Given Veterinary Scholarship. The award is administered by the Committee on Admissions in accordance with the intent of the trustees of the Given Foundation to help qualified students applying for admission who might otherwise be financially unable to attend this college.

Arthur G. Hall Scholarship. Established in 1975 as an endowed scholarship for needy and worthy students who maintain the moral standards required by the rules and regulations of the college.

Bertha Hamilton Scholarships. Since 1972 a portion of the annual income of the Bertha Hamilton Trust has been donated to the College of Veterinary Medicine for scholarships to be awarded by the faculty on the basis of academic performance and financial need. Ten to fifteen scholarships are available each year.

David Kennedy Johnston Scholarships. Under the will of Nettie J. Huey, funds were set aside to provide scholarships to students in the College of Agriculture and Life Sciences and the College of Veterinary Medicine. Five to ten scholarships are available each year.

Valentine Mott Knapp Scholarship. This annual scholarship was established through the will of David V. Knapp as a memorial to his brother, Dr. Valentine Mott Knapp '04. The award is made at the end of the third year. In awarding the scholarship, the faculty

will take into consideration the ability of the applicant to do creditable academic work, the personal characteristics of the applicant with respect to professional attitude, and his or her financial need.

Madelyn C. Kreisler Scholarship. Established in 1977 from the Madelyn C. Kreisler estate to provide scholarships in veterinary medicine.

Germaine B. Little Student Loan Fund. This loan-scholarship fund was established by the will of Germaine B. Little. Income from this fund is awarded annually to selected veterinary students who have demonstrated financial need.

Miles C. Markham Scholarship. This endowed scholarship was established in 1976 in honor of Dr. Miles C. Markham by his wife, Hedwig, for worthy, needy students in the college. It is awarded on the basis of general worthiness of applicants, taking into consideration their overall character, academic ability, and financial needs.

Dr. John G. Marvin Scholarships. Sponsored by the Western New York Veterinary Association in honor of Dr. John G. Marvin '30, Fillmore, New York. The scholarships are awarded to students who have completed their third year of study and are residents of Western New York counties. Selection is based upon financial need and the awards are presented at the Erie County Fair.

Merrimack Valley Kennel Club Scholarship. The club, of Derry, New Hampshire, sponsors an annual award of \$200 for a student-resident from one of the New England states. The student is selected on the basis of financial need and creditable academic standing.

New York State College of Veterinary Medicine Campaign for Excellence Student Fund. This loan-scholarship fund was established from contributions to the college by alumni and friends through the 1976-80 campaign for Cornell veterinary medicine. Income from the fund is offered annually as scholarship support for students with financial need.

Pfizer Scholarship. This scholarship is awarded to a student at the end of the third year whose academic achievement is adequate, whose need for the award is clear, and who shows good potential.

Ryman and Katherine Powell Student Fund. This loan-scholarship fund was established by two veterinarians, Frank, '63, and Joseph, '67, Powell in honor of their parents. Earned income from this endowment is awarded annually in the form of scholarship, with preference given to students from western New York State.

Maurice H. Skyer Memorial Scholarship. Provided by the Monticello-Goshen Chapter of the United States Harness Writers Association, this scholarship of \$300 is to be awarded to a student from Orange, Sullivan, Ulster, Delaware, or Dutchess County in New York, or from Pike, Wayne, Lackawanna, or Luzerne

County in Pennsylvania. The student must be interested in working with horses. The scholarship is awarded for use in the fourth year.

Student Auxiliary/Student Chapter of the American Veterinary Medical Association Scholarship.

This award is for the purchase of textbooks required in the veterinary program. Married students beginning their second year whose spouses are members of the Student Auxiliary and who have demonstrated financial need and satisfactory academic standing are eligible. Credit accounts are established at the bookstore for the recipients.

The Jim Dale Thomas Memorial Scholarship. This award was established as a prize in 1965 and became a scholarship in 1969. The scholarship is awarded, for use in the fourth year, to a third-year veterinary student who has shown an interest in dairy cattle practice and has a high level of capability in this field. The award is made on the judgment of the faculty of the Department of Clinical Sciences.

Troy Kennel Club provides a scholarship of \$250 for a veterinary student who needs financial assistance and who has maintained good academic standing.

Veterinary Virus Research Institute Scholarship.

The Veterinary Virus Research Institute of the New York State College of Veterinary Medicine provides a scholarship to support a veterinary student in the combined D.V.M.-Ph.D. program. Funds will be awarded on a competitive basis and provide a stipend, dependency allowance, waiver of tuition, and support for certain research costs. The recipient of this scholarship is expected to pursue a research project dealing with canine diseases.

Colonel and Mrs. Louis G. Weisman Fund. This endowed fund can be used for either loan or scholarship purposes at the discretion of the college. Scholarships are granted from fund earnings to students on the basis of academic performance and financial need.

Women's Auxiliary to the Long Island Veterinary Medical Association Scholarship.

An award for an outstanding Long Island veterinary student who is also in need of financial aid.

Women's Auxiliary to the New York State Veterinary Medical Society Scholarship.

Two scholarships are awarded each year—one to a student at the end of the sophomore year and the other available to any student. The award of these scholarships will be based on the applicants' financial need and ability to do creditable academic work.

Yonkers Raceway Foundation Scholarship. By action of the executive committee of the Yonkers Raceway Foundation, an endowed scholarship of \$500 was established at the College of Veterinary Medicine to be awarded to a needy student who is a resident of New York State. The same criteria will be used in awarding this scholarship as are used in selecting the candidates for the Valentine Mott Knapp scholarship.

Prizes for Veterinary Students

These are among the prizes awarded at the college Annual Honor Day Banquet held each year in the spring.

American Animal Hospital Association Student Award.

This award of an engraved plaque and a letter of commendation is made to a senior in recognition of outstanding proficiency in small animal medicine and surgery. The nominations are made by faculty of the Medical and Surgery Sections of the Department of Clinical Sciences who are responsible for teaching in the Small Animal Clinic.

The James Gordon Bennett Prize. In 1916 Mr. James Gordon Bennett, New York, New York, endowed this prize for the students who show the greatest humaneness in handling animals, with special reference to the use of anesthesia. Mr. Bennett was the editor of the *New York Herald* (forerunner of the *Herald Tribune*) a century ago. A man of diverse abilities and interests, he is the person who dispatched Henry M. Stanley in 1870 to find Dr. David Livingstone in Africa. Nominations are made by the faculty of the Section of Anesthesiology in the Department of Clinical Sciences.

The Anne Besse Prizes. Miss A. B. Jennings of New York City endowed this prize in 1925, for the best work in large animal medicine. Nominations are made by the Medical Section faculty of the Department of Clinical Sciences who teach large animal medicine.

The Frank Bloom Pathology Award. This prize was established in 1978 with an endowment by Dr. Frank Bloom. Dr. Bloom, a 1930 Cornell graduate, is a Charter Diplomate of the American College of Veterinary Pathologists as well as a Diplomate of the American College of Laboratory Animal Medicine. He has practiced in Flushing, New York, taught at Downstate Medical Center, and has published quite extensively. The nomination for a senior who has demonstrated special excellence in pathology is made by the Department of Pathology.

The Charles Gross Bondy Prize. Mr. Richard Bondy, New York, New York, endowed this prize in 1929 as a memorial to his son. It is given for the best work in the courses in practical medicine and surgery of small animals. Nominations are made by the faculty of the Medical and Surgical Sections of the Department of Clinical Sciences who teach in the Small Animal Clinic.

The A. Gordon Danks Large Animal Surgery Award.

This award was initiated in 1978 by the faculty of the Surgical Section of the Department of Clinical Sciences who teach in the Large Animal Clinic. It is in recognition of the outstanding contributions of Professor Emeritus A. Gordon Danks, first Director of Student Administration and Admissions and former chairman of the former Department of Large Animal Medicine and Surgery. It is presented to a senior demonstrating outstanding knowledge and talent in the diagnosis and treatment of surgical problems of large animals. Basic and applied knowledge, diagnostic abilities, general

surgical skills, and patient care exhibited during the clinical rotations are considered in the presentation of this award.

The Donald D. Delahanty Memorial Prize. This prize was established as a special memorial to Dr. Donald Delahanty, a member of the Department of Large Animal Medicine, Obstetrics, and Surgery from 1952 to 1975. The prize is given to a fourth-year student who has shown an interest in equine practice and a high level of proficiency in the field. The candidate is nominated by the faculty of the Department of Clinical Sciences concerned with the equine patient.

American Association of Feline Practitioners Award. This award of a recognition plaque, publication of the biographical sketch of the award recipient, and two years free membership in the American Association of Feline Practitioners is to a senior who has shown special interest and accomplishment in feline medicine and surgery. Selection of the recipient is made by the faculty of the Small Animal Clinic.

The Myron G. Fincher Prize. An award initiated in 1980 through an endowment from Dr. Neil W. Pieper '32 given in honor of Professor Emeritus Myron G. Fincher '20. It is in recognition of the many contributions to the college by Dr. Fincher. Always a gentleman, he firmly demanded the best from his students and played a leading role in the instruction of large animal medicine and obstetrics for forty-five years. The award is presented to a senior student who has demonstrated the best work in courses dealing with large animal obstetrics and reproductive diseases. Both academic and practical performance are considered. Nominations are made by the Section of Theriogenology in consultation with other clinical faculty responsible for fall-semester teaching.

The Gentle Doctor Award. Sponsored by the Class of 1979, this award was made possible by Dr. William E. Hornbuckle's contribution of the money received from the Norden Distinguished Teacher Award to the Class of 1979. This award, a bronzed statue of the Gentle Doctor, is to be given to the senior who demonstrated the best patient care in the Large or Small Animal Clinic. The candidate is nominated by the staff of the Department of Clinical Sciences.

The Grant Sherman Hopkins Prize. The endowment for this prize was given by Mrs. Ann Ottaway Hopkins in 1955 in memory of her husband, who was a member of the original faculty and served the University and college for forty-five years as professor of veterinary anatomy. It is awarded upon the recommendation of the faculty in the Department of Anatomy on the basis of interest, ability, perseverance, and performance in the work in that department.

The P. P. Levine Prize in Avian Medicine. This prize was established from donations made by friends and colleagues of Dr. P. P. Levine in memory of his many contributions to the field of avian medicine, both nationally and internationally. Dr. Levine was a long-time member of the Cornell faculty and was the first chairman of the Department of Avian Diseases. Much

of his life was dedicated to the training of young people and encouraging them to aspire to excellence. In the spirit of encouraging excellence, this prize is awarded to the second-year veterinary student who has attained the highest grade in the course on avian medicine.

The Merck Manual Awards. Two copies of the Merck Veterinary Manual, embossed with the names of the recipients and provided by Merck and Company, Inc., are presented to members of the graduating class. The basis of the award may vary from year to year and is determined by the dean and the director of student administration. It will be awarded this year in special recognition of outstanding advancement in scholastic performance.

The Jane Miller Prize. Funds for the endowment of this prize were given by Dr. Frank H. Miller, a trustee of Cornell University for twenty consecutive years, a graduate of McGill University, and cofounder, with H. K. Miller, of the first small animal hospital in New York City. The prize is for the best work in veterinary physiology. It is awarded as a memorial to Dr. Miller's wife to members of the second-year class. Candidates are nominated by the faculty of the Department of Physiology/Physical Biology.

The Malcolm E. Miller Award. In 1965 Mrs. Mary Wells Miller established this award in memory of her husband, Dr. Malcolm E. Miller '34, a former professor of anatomy and the head of that department from 1947 to 1960. The recipient is to be a fourth-year student who, in the judgment of the dean and the director of student administration, has demonstrated perseverance, scholastic diligence, outstanding improvement and other personal characteristics that will bring credit and distinction to the veterinary profession.

The Mary Louise Moore Prize. Dr. Veranus A. Moore established this endowed prize as a memorial to his wife; it is given for the best work in bacteriology. Dr. Moore served as head of the Pathology and Bacteriology Department and as dean of the Veterinary College from 1908 to 1930. Nominations are made by the Department of Veterinary Microbiology.

The New York State Veterinary Medical Society Prize. Funds for this prize are provided annually by the society for the best case report. Members of the fourth-year class are eligible to compete. Nominations are made by the Senior Seminar Committee who judge the quality of the case reports.

The Norden Distinguished Teacher Award. The recipient must be a full-time member of the veterinary medical faculty and be primarily engaged in teaching, which may include part-time research. His or her preceptorship and teaching ability as judged by responsiveness of the students and his or her moral character and leadership shall be the primary qualifications considered.

Philotherian Photographic Prizes. Dr. and Mrs. Hadley C. Stephenson established this endowment. Photographs of animals, submitted by students or their

spouses, are judged by a committee appointed by the Dean. Two prizes are awarded on the basis of individuality of the animal, its enjoyment of its surroundings, and the effect it has on the feelings of the judges.

The Phi Zeta Award. The Alpha Chapter of Phi Zeta, the honor society of veterinary medicine, acknowledges the second-year student with the best academic record upon completion of the first three semesters of study. The recipient of the award receives the Beeson-MacDermott *Textbook of Medicine*.

The Anna Olafson Sussex Pathology Award. This award was endowed in 1974 by Peter and Harriette Olafson in memory of Dr. Olafson's sister. The award is to be given at the end of the third year. The award is to be made on the recommendation of the people actively engaged in teaching pathology.

The Jacob Traum Award. Through an endowment established by friends of Jacob Traum '05, professor of bacteriology emeritus, University of California, and formerly chief scientist at the federal Plum Island Animal Disease Laboratory, this prize is awarded to the fourth-year students who are adjudged by the Department of Veterinary Microbiology as having exhibited in their scholastic career superior interest and accomplishment in bacteriology, epizootiology, pathology, and virology, including aptitude for and expressed interest in research on infectious diseases.

The Horace K. White Prizes. An endowment for these prizes was originally given by Mr. Horace K. White (and later his sons, of Syracuse, New York) for the students whose academic records for the entire veterinary course are the highest. This award, originally called the President's Prize, dates back to 1873 and is probably the longest-standing prize at Cornell. The original donor was a brother to Andrew Dickson White, the first president of the University.

The Prize of the Women's Auxiliary of the American Veterinary Medical Association. On the recommendation of the Committee on Scholarships, this award is presented to the member of the fourth-year class who is deemed to have best advanced the standing of the College of Veterinary Medicine campus by special extracurricular contributions.

Requirements for Graduation

The prescribed four-year curriculum leading to the degree of Doctor of Veterinary Medicine (D.V.M.) is summarized in the section below. To receive this degree, candidates must satisfy all the entrance requirements (pp. 8-11), successfully complete the courses named in the curriculum below, have paid all fees due, have spent at least one year in residence, and be recommended for graduation by the college faculty.

The academic year, divided into two terms, begins in September and ends in May. Under consideration is a proposal to initiate summer academic clinics for the period between the end of the normal third year

and beginning of the fourth year of classes. Students would be given appropriate vacation periods (free blocks) at other times to generally compensate for time spent in clinical study during the summer period.

At the conclusion of each term, the college faculty reviews the records and conduct of students. Unsatisfactory students may be denied permission to register, graduate, or varying degrees of academic warning or probation may be assigned.

The Curriculum

The college has a core-elective curriculum. A summary of the core curriculum is shown below.

The abbreviation "Req." indicates that a course, or its equivalent, is required for graduation but that no formal credit is given for the course. Courses marked "S" are offered on an S-U basis only.

First Year

<i>Fall Term</i>	<i>Credits</i>
500 Gross Anatomy	5
502 Developmental and Cytology Anatomy	3
525 Vertebrate Biochemistry	5
545 Principles of Epidemiology	2
568 Veterinary Medical Orientation	S2
581 Basic Nutrition	2
	—
	19

Spring Term

501 Gross Anatomy	5
503 Histology and Organology Anatomy	3
504 Neuroanatomy	2
526 Physiology for Veterinary Students	V4
569 Veterinary Medical Orientation	S1
	—
	15

Second Year

<i>Fall Term</i>	<i>Credits</i>
510 Animal Parasitology	2
511 Diagnostic Parasitology	2
515 Immunology	2
516 Bacteriology and Mycology	3
527 Physiology for Veterinary Students	4
535 Veterinary Pathology I	4
560 Clinical Methods	2
	—
	19

Spring Term

517 Veterinary Virology	2
518 Infectious and Zoonotic Diseases	3
528 Basic Pharmacology	6
536 Veterinary Pathology II	5
555 Avian Diseases	2
561 Obstetrics and Reproductive Diseases	3
579 General Medicine	2
	—
	23

Third Year

<i>Fall Term</i>	<i>Credits</i>
505 Applied Anatomy	1
529 Clinical Pharmacology	2
539 Introduction to Laboratory Animal Medicine	1
546 Clinical Orientation	1
550 Applied Radiation Biology and Veterinary Nuclear Medicine	1
562 Obstetrics and Reproductive Diseases	3
563 Large Animal Medicine	4
571 Clinical Pathology	3
583 Small Animal Medicine and Surgery	3
587 General Surgery	3
	—
	22
<i>Spring Term</i>	
506 Applied Anatomy	1
520 Preventive Medicine in Animal Health Management	2
564 Large Animal Medicine	4
565 Large Animal Surgery	3
567 Clinical Nutrition	2
582 Large Animal Surgical Techniques	1
584 Small Animal Medicine and Surgery	8
586 Small Animal Surgical Exercises	2
	—
	23

Fourth Year

<i>Fall Term</i>	<i>Credits</i>
572 Senior Seminar	Req.
573 Large Animal Clinic	3
575 Ambulatory Clinic	3
577 Diagnostic Services	3
589 Small Animal Medical Clinic	3
591 Small Animal Surgical Clinic	3
	—
	15

<i>Spring Term</i>	
572 Senior Seminar	Req.

Elective Blocks

Major blocks:

570 Theriogenology	4
574 Large Animal Surgical Clinic	4
576 Ambulatory/Mastitis Clinic	4
590 Small Animal Medicine Clinic	4
592 Small Animal Surgical Clinic	4
594 Large Animal Medicine Clinic	4
596 Opportunities in Veterinary Medicine	4

Minor blocks:

540 Clinical Pathology Clinic	2
541 Necropsy Clinic	2
547 Practice Management Experience at the Small Animal Hospital	2
578 Anesthesia Clinic	2
580 Radiology Clinic	2
593 Ophthalmology Clinic	2
598 Dermatology Clinic	2

Students must take a total of sixteen credits of course work.

Honor Societies

There are three honor societies for which students of the College of Veterinary Medicine are eligible.

Phi Zeta. Founded in 1925 by the students of the New York State Veterinary College at Cornell University, Phi Zeta strives for the constant advancement of the veterinary profession, higher educational requirements, and superior scholarship. The object of the society is to recognize and promote scholarship and research pertaining to the welfare and diseases of animals.

Sigma Xi. Any student or research staff member is eligible for membership in Sigma Xi, the Scientific Research Society of North America. It is the responsibility of the Admissions Committee of Sigma Xi to select for membership those individuals whose research aptitude or achievement deserves special recognition.

Phi Kappa Phi. The society of Phi Kappa Phi was founded in 1897 and soon became a national organization. Its primary objective is to recognize and encourage superior scholarship in all fields of study. Good character is an essential supporting attitude for those elected to membership.

Legal Requirements to Practice

Before graduates can practice veterinary medicine in the United States they must obtain a license from the state or states in which they locate their practices. This license generally is issued by the department of education or the department of agriculture of the state on the basis of an examination by a veterinary licensing board. Some states issue licenses without examination, based upon reciprocity, when the applicant has been licensed in other states.

In New York, the licensing agency is the State Education Department. All inquiries should be addressed to the Secretary of the State Board of Examiners, 99 Washington Avenue, Albany, New York 12210. Application for the examination must be filed at least sixty days before the scheduled date and must be accompanied by a fee. Other details are available from the State Board of Examiners.

Health Services

Health services for students are centered in the Gannett Health Center, 10 Central Avenue, adjacent to Willard Straight Hall. Students are entitled to unlimited visits at the center. Appointments with individual doctors at the center should be made by calling 256-4082 or by visiting the center in person. (An acutely ill student will be seen promptly whether he or she has an appointment or not.) Students are also entitled to most laboratory and x-ray examinations. Overnight and after-hours or emergency care are provided without additional cost. The cost of these services is covered by tuition.

20 Housing and Dining Facilities

The center is open twenty-four hours a day; normal working hours are 8:30 a.m. to 5 p.m. Monday through Friday and 8:30 a.m. to 12:30 p.m. Saturday.

If, in the opinion of the University authorities, the student's health makes it unwise to remain in the University, the student may be required to withdraw.

Student Accident and Sickness Insurance Plan

Cornell sponsors a health insurance plan underwritten by a private insurance company to supplement the services outlined above. This plan may be waived if the student has other health insurance or is willing to accept the financial risk of no insurance. Students are urged to carefully consider the comprehensive benefits available for a relatively modest fee before waiving the plan. The plan covers services not available on campus, such as hospital care and consultations. Further, it provides for expenses relating to illness or accidents outside Ithaca during the academic year and vacation periods. Families of students are eligible for coverage. Information about this insurance may be obtained by calling 607/256-6363 or visiting Gannett Health Center, where a representative of the insurance company has an office.

Health Care Plan for Student Spouses

The University Health Services provides health care for student spouses on a prepaid or fee-for-service basis. The fee schedule and other information about this service is available at the front desk and in the Student Insurance Office.

Emergency Health Service

Students requiring after-hours or emergency care should call the health center at 256-5155 to receive instructions on the proper course of action to follow.

Housing and Dining Facilities

University Housing

All applications for University housing should be made immediately upon provisional acceptance.

Cornell provides residential facilities on campus for about 5,500 students. These facilities are located in two areas that lie to the north and west of the central campus. Detailed descriptions of various housing accommodations are found in the booklet *Living on Campus*, which is mailed to candidates for admission upon notification of their acceptance to Cornell.

Students are not subject to a residence requirement, and should note that acceptance to Cornell University does not guarantee the availability of on-campus accommodations.

An application form for on-campus housing will be enclosed with the notice of provisional acceptance to each candidate from the Office of Admissions.

Information about available housing and rental rates may be obtained from the Housing Assignment Office, 223 Day Hall.

Graduate Students

University housing in residence halls is available to single graduate students upon application to the Housing Assignment Office, 223 Day Hall, Cornell University, Ithaca, New York 14853.

Sage Graduate Center provides housing for approximately 200 men and women. Situated in the center of the campus, it is convenient to all colleges. There is a cafeteria in the building. Cascadilla Hall accommodates approximately 160 graduate men and women. It is just inside the southwest entrance to the campus. A third residence is a small apartment building, Thurston Court, housing 26 graduate students. It is located just north of the Fall Creek Gorge on Thurston Avenue.

Student Families

The University maintains apartment accommodations for approximately 420 students and their families. These are Cornell Quarters, Pleasant Grove Apartments, and Hasbrouck Apartments. All accommodations are unfurnished. Requests for further information and application should be directed to the Family Housing Office, Building 40, Hasbrouck Apartments, Ithaca, New York 14850.

Off-Campus Housing

Information on housing that is currently available is posted on a board at the Housing Assignment Office, 223 Day Hall. Because changes of available accommodations occur daily, it is not practical to prepare lists. If possible, a student should plan to visit Ithaca well in advance of residence in order to obtain suitable quarters off campus.

Dining Services

Cornell Dining operates dining services in eight locations—Willard Straight Hall, North Campus Union, Noyes Student Center, Balch Hall, Sage House, Hughes Hall, Noyes Lodge Pancake House, and Risley Hall. Other dining locations include Café Rhea, run by the School of Hotel Administration, and the Dairy Bar, run by the Department of Food Science. These facilities are open to all students on a cash or credit basis, whether or not they live in University residence halls or subscribe to a specific dining plan. The University has no formal dining requirements, allowing students the flexibility of eating when and where they choose.

For those students who want to subscribe to a dining plan, the following options are offered: the Co-op Dining Program, prepaid each semester, allows students to eat all they want during specified times at six Co-op Dining Centers (Willard Straight Hall, Noyes Student Center, North Campus Union, Risley Hall, Sage House, and Balch Hall) at a food-cost savings. Students participate in any one of eleven

co-op plans. Students may choose from a wide selection of daily entrees, fresh fruits, vegetables, and salads and there are unlimited seconds. Co-op 2000, located in Balch Hall, is a program administered by a registered dietitian who is available to counsel individuals with special interest in a nutritious diet. Additional information may be obtained from Cornell Dining, 233 Day Hall.

Cornellcard, a credit card for those who do not want to pay cash for each meal or be on the Co-op Dining Plan, is honored by Cornell Dining. The Cornell-card program is administered by the Bursar's Office. Information is available from the Bursar's Office, Cornell University, 260 Day Hall.

Cornell Dining also operates a grocery store on campus, the Pick-Up in Noyes Lodge, and vending machine areas in Martha Van Rensselaer and Warren Halls and the Veterinary College, which offer hot and cold food and drinks. In these areas radar ovens are provided for convenience in heating food.

Cornell Dining also has a catering department which is available to members of the Cornell Community.

Conduct of Students

The standards of conduct expected of a Cornell veterinary student are defined by various University regulations and the College of Veterinary Medicine Student Honor Code. The code was established in recognition of the importance of ethics, honor, and integrity in an individual's training for the profession. It places the responsibility for ethical and professional conduct upon the students, and is implemented by a Student Administrative Board granted initial jurisdiction by the faculty. A copy of the honor code is given at registration to veterinary, graduate, and undergraduate students taking courses at the college. It is each student's responsibility to become familiar with the contents of the code and to abide by it throughout his or her involvement with the college.



Description of Courses

Under each department heading, there are brief descriptions of the courses offered. Most of these courses are a part of the veterinary core curriculum; some are elective to veterinary students or are given primarily for graduate students or students of other colleges of the University.

Courses in other colleges available to all Cornell students are listed in *Description of Courses*.

Course Numbering System

500 series D.V.M. core curriculum courses

600 series Elective courses for D.V.M. and other students

700 series Graduate-level courses

Anatomy

Professors H. E. Evans, chairman, J. F. Cummings, A. deLahunta, W. O. Sack; Associate Professor D. M. Noden; Instructor M. Behr; Teaching Assistants S. Crowell-Davis, L. C. Hudson, C. Maala, M. Cukierski

Anatomy courses occupy the largest block of student time during the first year. The department offers 30 credit hours of instruction, including six core courses and six elective courses.

The anatomy laboratories are well-equipped and pleasant to work in. The department maintains a transmission electron microscope and a large serial section embryo collection. Facilities and materials are available for graduate research in neuroanatomy and clinical neurology; gross, microscopic, and ultrastructural anatomy; developmental, comparative, and applied anatomy.

The interests and experiences of the faculty are diverse and allow them to counsel in a variety of areas. A significant effort is made by the faculty to keep abreast of the literature, investigate current anatomical questions, and publish the findings with illustrations prepared in the department. Several books and manuals have been written by faculty members for student use.

500 Gross Anatomy First year, fall term. Credit five hours. Prerequisite: course work equivalent to that

required for admission to the veterinary college.

Lecture, T 9:05. Laboratories, M T R F 10:10-12:35.

H. E. Evans, A. deLahunta, D. M. Noden, M. Behr, and assistants.

The structure of the typical mammal is studied by detailed systematic and regional dissection of the dog. The basic features of avian anatomy are studied by dissection of the chicken, and the anatomy of fish and laboratory animals is reviewed in appropriate species. The lectures (supplemented by demonstrations and films) consider the comparative and regional gross aspects of vertebrate organ systems, anatomical terminology, literature, techniques, and radiographic anatomy.

501 Gross Anatomy First year, spring term. Credit five hours. Prerequisite: Anatomy 500. Lecture, R 8. Laboratories, M W R 2:05-4:25, T 10:10-12:35. W. O. Sack, C. Maala, M. Behr, and assistants.

Regional anatomy of the horse, cow, sheep, and pig is studied by dissection. Special attention is given to the anatomy of physiological processes and clinical procedures, and the veterinary public health inspection of food animals.

502 Developmental Anatomy and Cytology First year, fall term. Credit three hours. Prerequisites: course work equivalent to that required for admission to the veterinary college and completion of, or concurrent registration in, Anatomy 500 or 700. Lecture, M 8. Laboratories, W 10:10-12:35, R 2:05-4:25. Ten weeks, D. M. Noden, four weeks, J. F. Cummings, and assistants.

The study of development is designed to provide a foundation for the understanding of definitive anatomy and the formation of anomalies. The latter part of the course is devoted to cytology and histology, illustrated with material from the domestic animals.

503 Histology and Organology First year, spring term. Credit three hours. Prerequisites: Anatomy 502 and completion of, or concurrent registration in, Anatomy 501 or 700. Lecture, T 9:05. Laboratories, T 2:05-4:25, F 10:10-12:35. J. F. Cummings and assistants.

The microscopic structure of the tissues and organs of domestic animals is studied. Illustrated lectures are presented to relate structure to function, correlate

24 Physiology and Physical Biology

microscopic and gross anatomy, and establish a foundation for subsequent studies in physiology and pathology. Slides of tissues and organs are provided.

504 Neuroanatomy First year, spring term. Credit two hours. M 10:10-12:35, T 8. A. deLahunta. The nervous system of domestic animals is studied by functional systems. This is a vertically integrated course that includes the diagnosis of diseases of the nervous system. Clinical cases with pertinent lesions are demonstrated with each system.

505-506 Applied Anatomy Third year, fall term. Credit one hour. Laboratory T W or R 2:05-4:25. Third year, spring term. Credit one hour. Laboratory, T R or F 2:05-4:25. A. deLahunta. An opportunity for practice in the recognition of the anatomical features that are essential to diagnostic, surgical, obstetrical, and postmortem procedures. The approach is topographical, comparative, and clinical. The emphasis is on the study of living animals, supplemented by dissections, serial transections, models, and radiographs.

600 Special Projects in Anatomy Fall and spring term. By permission of instructor only. Hours to be arranged (one credit per 2½-hour period).

601 Advanced Anatomy Fall and spring terms. Hours and credit to be arranged. Prerequisites: Anatomy 500 and 502 or similar preparation in comparative anatomy, embryology, and histology. A. deLahunta, H. E. Evans, W. O. Sack, J. F. Cummings, D. M. Noden. An opportunity for advanced study under the personal direction of a faculty member.

602 Advanced Clinical Neurology Spring term. Credit one hour. Prerequisite: first three semesters of veterinary curriculum. W 8. A. deLahunta. Correlation of anatomy, physiology, and pathology in the diagnosis and treatment of diseases of the nervous system and an understanding of their pathogenesis. Case demonstrations will be emphasized.

[700 Vertebrate Morphology (also Bio S 414)] Spring term. Credit three hours. Prerequisite: graduate status or Biological Sciences 274. Laboratories, T R 1:30-4:30. H. E. Evans. Offered alternate years. Designed for advanced students in animal and biological sciences. A dissection of the dog serves as the basis for a functional consideration of the component parts of mammalian organ systems. This is followed by a dissection of the cow. Other species (fish to mammal) of interest to the class may also be presented.]

Pharmacology

Professor G. W. G. Sharp, chairman; Associate Professor W. S. Schwark; others to be appointed.

The Department of Pharmacology staffing and course offerings for the 1980-81 school year are being revised at this time. Specific information about faculty, staff, and courses may be obtained by contacting the department.

528 Pharmacology Second year, spring term. Credit six hours. Prerequisites: Anatomy 500, 501, 502, 503, 504; Physiology 525, 526, 527; Pathology 535 or consent of the instructors. Lectures, M R 8:00, T W F 1:05. Laboratory, T 2:05-4:25. W. S. Schwark and others.

Topics covered will include physiological disposition of drugs and poisons, drug receptor interactions, cellular pharmacology, action of drugs affecting the nervous, cardiovascular, gastrointestinal, integumentary, respiratory, endocrine, and urinary systems, and chemotherapy. A number of toxicological topics will be covered in the laboratory session.

529 Clinical Pharmacology Third year, fall term. Credit two hours. Prerequisite: Pharmacology 528 or consent of the instructors. Lectures, T R 1:05. W. S. Schwark.

Topics covered will include chemotherapy, action of drugs affecting the heart, gastrointestinal tract, skin, and the respiratory, endocrine, and urinary systems.

621 Toxicology Spring term for second-, third-, or fourth-year students. One credit. Grading is S-U. Offered alternate years. F 2:05. W. S. Schwark. Basic and clinical aspects of the more common poisonings that affect domestic animals will be considered. Emphasis will be given to heavy-metal poisoning; chelation phenomena; selected organic poisonings including pesticides, herbicides, and rodenticides; and forensic considerations.

622 Special Projects in Pharmacology Fall, spring, or summer term. Hours to be arranged. By permission of instructor only. W. S. Schwark.

721 Research Fall or spring term. Graduate students only. Hours to be arranged.

Physiology and Physical Biology

Professors W. Hansel, chairman, A. Bensadoun, E. N. Bergman, A. P. Casarett, A. Dobson, R. H. Foote, E. L. Gasteiger, T. R. Hout, F. Kalfelz, F. W. Lengemann, W. N. McFarland, A. F. Sellers, D. N. Tapper, A. van Tienhoven, R. H. Wasserman, W. Wimsatt, J. F. Wootton; Associate Professors R. A. Corradino, H. Howland, F. H. Pough, J. C. Thompson, Jr.; Assistant Professors K. Beyenbach, W. R. Butler, W. B. Currie, J. Fortune, K. Hout, E. Loew; Senior Research Associates P. W. Concannon, C. J. Drost, C. S. Fullmer, R. A. Wentworth; Research Associate G. J. Milanowski; Postdoctoral Associate J. Pell; Graduate Assistants J. Anderson, T. Wolski

The Department of Physiology and Physical Biology staffing and course offerings for the 1980-81 school year are being revised at this time. Specific information about faculty, staff, and courses may be obtained by contacting the department.

The department is well equipped for advanced work in the applications of physical and biochemical methods to problems of animal and biological research. The following research areas are emphasized: (a) environmental contamination, (b) membrane transport, (c) mineral metabolism, (d) neurophysiology, (e) physical

methods in veterinary medicine, (f) radiation biology, (g) veterinary nuclear medicine, (h) physiology, and (i) reproductive physiology.

The Department of Physiology and Physical Biology is the nucleus of the Section of Physiology of the Division of Biological Sciences. The primary responsibility of this section is the teaching and training of undergraduate students of the University in the physiological disciplines, an activity in which this department has been involved for the past several years. The section includes joint appointees from other departments of the college and of the University, and expands the role of the college in University-wide educational activities and provides a means of additional interaction for other colleges of the University and the College of Veterinary Medicine.

Blo S 274 The Vertebrates Spring. 5 credits. Primarily for sophomores; this course is a prerequisite for many advanced courses in vertebrate biology, anatomy, and physiology. Laboratories limited to 21 students each section. Prerequisite: one year of introductory biology for majors. Fee, \$10. Lectures, T R 10:10. Laboratories, M W 1:25-5, M W 7-10 p.m., or T R 1:25-5. Staff.

An introduction to the evolution, classification, comparative anatomy, life history, and behavior of vertebrate animals. Laboratory dissection and demonstration are concerned with structure, classification, systematics, biology of species, and studies of selected aspects of vertebrate life.

Blo S 309 Techniques in Animal Handling and Surgery Intersession. Two credits. S-U grades only. Limited to 12 students, with preference given to students who are preregistered in an independent research course. Prerequisite: written permission of instructor. Fee, \$5. M T W R F 9-4:30. A. van Tienhoven.

Using audiovisual materials and actual experience, this minicourse is designed to teach students techniques needed for independent research and honors projects.

Blo S 313 Histology: The Biology of the Tissues Fall. Four credits. Prerequisite: one year of introductory biology; a background in vertebrate anatomy and organic chemistry or biochemistry strongly recommended. Lectures, T R 11:15. Laboratories, T R 2-4:25. W. A. Wimsatt. Provides the student with a basis for understanding the microscopic, fine structural, and functional organization of vertebrates as well as the methods of analytic morphology at the cell and tissue levels. The dynamic interrelations of structure, composition, and function in cells and tissues are stressed.

[Blo S 315 Ecological Animal Physiology, Lectures Fall. Three credits. Prerequisite: one year of introductory biology for majors. Offered alternate years. Not offered 1980-81. M W F 10:10. W. N. McFarland.

An introductory course for students interested in ecology and physiology. The characteristics of the physical environment that are important to organisms are discussed, and the physiological, behavioral, and

morphological adaptations of vertebrate and invertebrate animals to environment are analyzed.]

[Blo S 317 Ecological Animal Physiology, Laboratory Fall. One credit. Limited to 12 students. Prerequisite: concurrent enrollment in 315. Offered alternate years. Not offered 1980-81. Laboratory, W or R 1:25-4:25. W. N. McFarland. Exercises involve measurements of important environmental factors in local habitats, laboratory experiments to familiarize students with the use of physiological methods, and an individual student research project dealing with specific adaptations of organisms to environment.]

Blo S 318 Cellular Physiology Summer. Three credits. Prerequisites: one year of introductory college biology and chemistry, or permission of instructor. Lectures, M T W R F 9:30-12 for three weeks. M. V. Hinkle.

A basic course on physiological processes at the cellular level. Particular emphasis is placed on eucaryotic cells and on membrane-related phenomena. Topics include active, passive, and bulk transport across membranes; structure and function of cell organelles; cell growth and proliferation; intercellular communication; excitability; contractility; and specialized cells of the immune, endocrine, and neuromuscular systems. This course may be used as an introduction to organ or medical physiology.

Vet M 346 Introductory Animal Physiology, Lectures (also Blo S 311) Fall. Four credits. Prerequisites: one year of college biology, chemistry, and mathematics. Lectures, M W F 11:15; discussion to be arranged. Three preliminary examinations given at 7:30 p.m. D. N. Tapper.

A general course in vertebrate physiology emphasizing the basic characteristics of the circulatory, nervous, pulmonary, renal, and gastrointestinal systems; energy metabolism; endocrinology; and reproductive physiology. Neural and hormonal control of function is emphasized.

Vet M 348 Introductory Animal Physiology, Laboratory (also Blo S 319) Fall. One credit. Limited to 100 students, with preference given to students concentrating in animal physiology. Laboratories limited to 25 students each section. Prerequisite: concurrent or previous enrollment in Vet M 346. Laboratory, M T W or R 1:25-4:25. Each student must attend a laboratory on alternate weeks. D. N. Tapper.

Laboratory sessions will consist of demonstrations, instructor-assisted experiments, and student-run experiments covering the nervous, pulmonary, renal, circulatory, and gastrointestinal systems.

Blo S 351 Biological Rhythms with a Period of One Day to One Year Fall. One credit. Prerequisites: One year of introductory biology and either Math 106, 111, or 113. First offered fall 1980. Lecture, R 12:20. A. van Tienhoven.

Theoretical and practical aspects of circadian and circennial rhythms will be considered. Selected topics such as the biological clock of plants, insects, and vertebrates will be presented. Light will be considered

as a stimulus and as an entraining agent. The role of rhythms of migration and reproduction will be emphasized.

Bio S 410 Seminar in Anatomy and Physiology

Fall or spring. One credit. May be repeated for credit only once. S-U grades only. Limited to upperclass students. Hours and topics to be arranged. Organizational meeting first T of each semester at 7:30 p.m. in Behrman Biology Center (Stimmon G20). Staff (coordinator—W. Hansel).

Bio S 412 Special Histology: The Biology of the Organs

Spring. Four credits. Limited to 12 students. Prerequisite: Bio S 313 or written permission of instructor. Offered alternate years. Lectures, W F 9:05. Laboratories, W F 2-4:25. W. A. Wimsatt. A continuation of 313. The microscopic and ultrastructural organization of the principal vertebrate organ systems are studied in relation to their development, functional interaction, and special physiological roles. Courses 313 and 412 together present the fundamental aspects of the microscopic and submicroscopic organization of the vertebrate. The organization of the course involves student participation in lecture-seminars, and the prosecution of independent project work supplementary to the regular work of the laboratory. The latter enables students to gain practical experience with histological and histochemical preparatory techniques.

Bio S 416 General Animal Physiology: A Quantitative Approach, Lectures

Spring. Three credits. S-U grades optional. Prerequisites: one year of college biology and physics. Lectures, M W F 10:10. H. C. Howland.

The principles of animal physiology are developed through consideration of the functioning of cells, tissues, and organs. Specific topics discussed include respiration, metabolism, circulation, excretion, body mechanics, muscle contraction, nerve action, sensory reception, and central nervous system function. A quantitative, systems-theoretical approach is emphasized.

Bio S 418 General Animal Physiology, Laboratory

Spring. Two credits. Prerequisite: concurrent enrollment in Bio S 416 or equivalent. Lectures, one hour to be arranged. Laboratory, M T or R 1:25-4:25. H. C. Howland.

Students are introduced to basic techniques utilized in the study of the physiology of animal tissues. Experiments cover topics dealing with respiration, properties of muscle, circulation, activity of nerves, and osmotic phenomena.

Bio S 452 Comparative Physiology of Reproduction of Vertebrates, Lectures (also An Sc 452)

Spring. Three credits. Prerequisite: An Sc 427 or permission of instructor. Lectures, M W F 1:25. A. van Tienhoven.

Sex and its manifestations. Neuroendocrinology, endocrinology of reproduction, sexual behavior, gametogenesis, fertilization, embryonic development, care of the zygote, environment and reproduction, and immunological aspects of reproduction.

Bio S 454 Comparative Physiology of Reproduction of Vertebrates, Laboratory (also An Sc 454)

Spring. Two credits. Prerequisite: concurrent or previous enrollment in 452, or permission of instructor. Laboratory hours to be arranged; organizational meeting first F of semester at 2:30. A. van Tienhoven. The laboratory provides students with an opportunity to design and execute independently experiments with limited objectives.

Bio S 458 Mammalian Physiology

Spring. Six credits. Enrollment limited. Prerequisite: Vet M 346 or equivalent with written permission of instructor. Lectures M W F 8. Laboratory M or W 1:25-4:25; 4 additional hours to be arranged. K. W. Beyenbach and staff.

Selected topics in mammalian physiology are discussed in the lecture and concurrently studied in the laboratory. Specific topics are selected from the physiology of membranes and epithelia; nerve and muscle; heart and circulation; autonomic, somatic, and sensory nervous systems; respiration; digestion; salt and water balance; acid-base balance; and endocrine regulation.

Bio S 499 (formerly Bio S 419) Undergraduate Research in Biology

Fall or spring. Variable credit. Prerequisite: written permission from the staff member who will supervise the work and assign the grade. S-U grades optional. Any faculty member in the Division of Biological Sciences may act as a supervisor. Faculty supervisors outside the division are acceptable only if a faculty member of the division agrees to take full responsibility for the quality of the work. *This course is divided into multiple sections as printed in the Course and Time Roster and its supplement.* Students must register under supervisor's assigned section number, or Section 01 if supervisor was not assigned a section number.

Hours to be arranged. Staff.

Practice in planning, conducting, and reporting independent laboratory and library research programs.

Research credits may *not* be used in completion of the following concentration areas: animal physiology and anatomy; biochemistry; botany; cell biology; and ecology, systematics, and evolution.

No more than 4 credits of research may be used in completion of the following concentration areas: genetics and development, neurobiology and behavior.

525 Vertebrate Biochemistry

Fall term. Credit five hours. Limited to first-year veterinary students, graduate students, or students with permission of the instructor. Prerequisite: Biological Sciences 330-331 or an equivalent course in general biochemistry. Lectures, M T W R F 9:05. R. H. Wasserman and staff. An intermediate-level biochemistry course correlating metabolic, structural, and functional characteristics of animal tissues. Metabolic integration and regulation are emphasized.

526 Physiology for Veterinary Students

First year, spring term. Credit four hours. Prerequisites: Physiology 525, Anatomy 500 and 501, or Anatomy 700 and Biological Sciences 330-331, Principles of

Biochemistry. Lectures, M F 9:05, T 1:05. Laboratory, W or R 9:05-12:35. E. N. Bergman and staff.

527 Physiology for Veterinary Students Second year, fall term. Credit four hours. Prerequisite: Physiology 526. Lectures, M W F 1:05. Laboratory: section I, W 9:05-12:35; section II, R 1:05-4:25. T. R. Houpt and staff.

Vet M 550 Applied Radiation Biology and Veterinary Nuclear Medicine Third year, fall term. Credit one hour. M 10:10. B. Watrous.

Lectures on the nature of radiation effects on cells and tissues, and diagnostic and therapeutic applications in veterinary medicine.

Vet M 600 Graduate Research in Animal Physiology and Anatomy (also Bio S 719) Fall or spring. Variable credit. S-U grades optional. Prerequisite: written permission of section chairperson and staff member who will supervise the work and assign the grade. Hours to be arranged. Department of Anatomy staff.

Similar to Bio S 499, but intended for graduate students who are working with faculty members on an individual basis.

Bio S 619 Lipids (also Nutritional Sciences 602) Fall. Two credits. Lectures, T R 11:15. A. Bensadoun. Advanced course on biochemical, metabolic, and nutritional aspects of lipids. Emphasis is placed on critical analysis of current topics on lipid methodology; lipid absorption; lipoprotein secretion, structure, and catabolism; mechanism of hormonal regulation of lipolysis and fatty acid synthesis; and cholesterol metabolism and atherosclerosis.

620 Special Projects in Physiology Fall or spring term. By permission of instructors only. Hours to be arranged.

626 Veterinary Animal Behavior Spring term for all veterinary students. Credit two hours. M 1:05, F 2:05-4:25. K. A. Houpt, T. R. Wolski. The behavior of animals of interest to veterinarians. Dogs, cats, cattle, horses, sheep, and swine will be studied in depth; other species such as goats, rabbits, and chickens will be studied in less detail. The course will utilize both ethology and physiological psychology as approaches to animal behavior. The purpose will be not only to present the facts of animal behavior, but also to help the student to critically evaluate behavioral studies.

627 Acid-Base Relations Fall or spring term. Credit one hour. Prerequisite: Physiology 526 or permission of instructor. Elective course for all veterinary students. A. Dobson. The course uses a self-instruction program to promote an understanding of the basis, interpretation, and technique of measuring acid-base status.

Vet M 650 Special Projects in Physical Biology Fall or spring. Variable credit. S-U grades optional. Prerequisite: written permission of section chairperson and staff member who will supervise the work and

assign the grade. Hours to be arranged. Staff. Similar to Bio S 499, but intended for graduate students who are working with faculty members on an individual basis.

Vet M 653 Clinical and Research Techniques in Veterinary Nuclear Medicine Fall term. Credit two hours. Intended primarily as an elective course for veterinary students. Prerequisites: Vet M 550 or equivalent, Vet M 636 or equivalent, and/or permission of instructor. One lecture and one laboratory, hours to be arranged. F. A. Kallfelz, F. W. Lengemann. Lectures and laboratory exercises concerning the theoretical and technical aspects of radioisotope procedures of particular relevance to clinical veterinary medicine and veterinary research. Topics include nuclear detection instrumentation, intestinal absorption, blood volume, milk volume, autoradiography, whole-body counting, bone scanning, radioimmunoassay, and renal and thyroid function tests. Clinical cases will be used as available.

720 Special Problems in Physiology Fall or spring term. Hours to be arranged. Registration by permission. Laboratory work, conferences, collateral readings, and reports, adapted to the needs of students.

724 Physiologic Disposition of Drugs and Poisons Spring term. Credit one, two, three, four, or five hours. Prerequisites: a course in biochemistry and permission of instructor. M R 8, T W F 1:05. W. S. Schwark.

Depending on the number of credits selected, topics will include the factors governing the physiological disposition of drugs and poisons, drug-receptor interactions, selected aspects of cellular pharmacology, autonomic pharmacology, endocrine pharmacology, chemotherapy, and drugs affecting the central nervous, cardiovascular, gastrointestinal, integumentary, respiratory, and urinary systems.

726 Physiology Spring term. Credit three hours. For graduate students. Prerequisites: Biochemistry 525, Anatomy 500 and 501, or Anatomy 700. M F 9:05, T 1:05. E. N. Bergman, and others. Lectures and demonstrations on blood, lymph, cardiovascular system, respiratory system, urine secretion, and digestion.

727 Physiology Fall term. Credit three hours. For graduate students. Prerequisite: Physiology 726. M W F 1:05. T. R. Houpt and others. Lectures and demonstrations on circulation, digestion, endocrine organs, metabolism, and reproduction.

Vet M 750 Radioisotopes in Biological Research (also Bio S 616) Spring term. Credit four hours. Prerequisites: courses in animal or plant physiology, or permission of instructor. Lectures, T R 11:15. Laboratory, T 1:25-5. F. W. Lengemann. Lectures and laboratories will deal with the radioisotope as a tool in biological research. Among the topics considered will be the utilization and detection of beta-emitting isotopes, gamma spectrometry, Cerenkov counting, neutron activation, autoradiography, and whole body counting. Particular emphasis is

placed on liquid scintillation counting, double label experiments, and on ^{14}C and ^3H as metabolic tracers. Experiments are designed to present basic principles while utilizing plants or animals or both as the subject material.

Vet M 752 Biological Membranes and Nutrient Transfer (also Bio S 618) Spring. Two credits. Prerequisites: courses in animal or plant physiology, quantitative and organic chemistry, and physics, and permission of instructor; courses in cellular physiology and elementary physical chemistry recommended. Offered alternate years. Lectures, T R 11:15. R. H. Wasserman.

An introduction to elementary biophysical properties of biological membranes; theoretical aspects of permeability and transport; and mechanism of transfer of inorganic and organic substances primarily across epithelial membranes.

Vet M 753 Mammalian Neurophysiology (also Bio S 610) Spring. Three credits. Limited to 16 students. Prerequisites: two years of college biology; courses in biochemistry and physics recommended. Offered alternate years. Lecture and discussion, R 10:10. Laboratories, R 1:25-4:25 and additional hours to be arranged. E. L. Gasteiger.

Studies will include electrical activity of cells, reflexes, decerebrate rigidity, acoustic microphonic response, subcortical stimulation, and evoked and spontaneous cortical activity.

Vet M 755 Physical Biology Graduate Seminar Fall and spring terms. Credit one hour. W. Hansel and staff.

[Vet M 758 Molecular Mechanisms of Hormone Action (also Bio S 658)] Spring. Two credits. Prerequisite: permission of instructor. Offered alternate years. Not offered 1980-81. T R 8. R. A. Corradino. An advanced course developed from the current literature on endocrine mechanisms.]

Vet M 759 Nutrition and Physiology of Mineral Elements (also Bio S 615 and N S 659) Fall. Two credits. Prerequisites: courses in basic physiology, intermediate biochemistry, and general nutrition. Offered alternate years. Lectures T R 10:10. R. H. Wasserman, R. Schwartz, D. R. Van Campen. Lectures on nutritional aspects, and physiological, biochemical, and hormonal relationships of the prominent macroelements and microelements, with emphasis on recent developments. Included will be information on methodologies of mineral research and the essentiality, requirements, transport, function, homeostasis, interrelationships, and toxicity of various mineral elements.

Animal Reproduction and Development (An Sc 220) Fall. Four credits. Laboratories limited to 36 students each section. Prerequisite: one year of college biology or equivalent. Lectures, T R 9:05. Laboratory and demonstration, M T W R 2-4:25, T 10:10-12:35, or F 11:15-1:25. R. H. Foote.

An introduction to the comparative anatomy and physiology of reproduction of farm animals. The life cycle from fertilization through development and growth to

sexual maturity will be studied, with emphasis on physiological mechanisms involved, relevant genetic control, and the application to fertility regulation of animal and human populations. An audiotutorial laboratory is available for independent study to prepare for laboratory experiments.

Fundamentals of Endocrinology (An Sc 427) Fall. Four credits. (Students who wish to attend only the lectures should enroll in An Sc 426, a three-credit course.) Prerequisite: a course in human or veterinary physiology or permission of instructor. Lectures, T R S 10:10. Laboratory, T or R 1:25-4:25. R. Butler.

The physiology of the endocrine glands and the roles played by each hormone in the regulation of normal body processes. The laboratory work consists of a series of experiments designed to illustrate the basic principles of endocrinology.

Comparative Physiology of Reproduction of Vertebrates, Lectures (An Sc 452) Spring. Two credits. Prerequisite: An Sc 427 or permission of instructor. Lectures, W F 1:25. A. van Tienhoven.

Sex and its manifestations. Neuroendocrinology, endocrinology of reproduction, sexual behavior, gametogenesis, fertilization, embryonic development, oviparity, viviparity, environment and reproduction, and nutrition and reproduction.

Comparative Physiology of Reproduction of Vertebrates, Laboratory (An Sc 454) Spring. Two credits. Prerequisite: concurrent or previous enrollment in An Sc 428, or permission of instructor. Laboratory, hours to be arranged; organizational meeting F 2:30 first week of semester. A. van Tienhoven.

The laboratory provides students with an opportunity to independently design and execute experiments with limited objectives.

Pathology

Professors Robert M. Lewis, chairman, J. Bentinck-Smith, J. King, L. Krook, C. G. Rickard; Associate Professors D. H. Lein, R. R. Minor, F. W. Quimby, D. O. Slauson; Assistant Professors W. L. Castleman, G. L. Cockerell, B. J. Cooper, B. A. Summers; Emeritus Professors C. I. Boyer, Jr., P. Olafson; Adjunct Professor W. J. Dods; Adjunct Assistant Professor G. V. Lesser; Visiting Professor C. R. Huxtable; Visiting Fellow K. Bieniek; Interns and Residents N. Allison, G. Gibson, P. Harper, P. Hitchcock, D. Newton, E. Riley, L. Roth, J. Spitsbergen, G. Sykes; Graduate Assistants J. Crissman, P. Frelie, B. Froscher, R. Gunther, M. Langweiler, J. Lay, F. Leighton, P. Meunier, R. Seiler, C. Wimberly, M. Wolfe

The department's modern facilities provide ample opportunity for advanced work in necropsy and surgical pathology, immunopathology, nutritional pathology, laboratory animal pathology, laboratory diagnostic methods, and electron microscopy. The department maintains a necropsy service and tissue culture laboratories, and two electron microscope laboratories. These facilities provide an abundance of pathological material for teaching and research purposes. Clinical cases that have been adequately examined by clinical methods are available for necropsy study.

The following courses are given particularly for veterinary students. Courses in the 500 series are required. When there is room for them, properly prepared students of other colleges will be admitted, but permission to register must be obtained.

535 Veterinary Pathology I Second year, fall term. Credit four hours. Prerequisites: Anatomy 502 and 503 or equivalent histology courses. Non-veterinary medical students also must have permission of instructor. Lectures, T R 9:05. Laboratories, T R 10:10-12:35. D. O. Slauson.

A study of disease processes beginning at the cellular level and progressing to selected body systems. Cellular pathology, injury and death at the cellular and tissue level, derangements in body fluids and blood flow, inflammation and repair, the nature and causes of tissue injury, abnormalities of cell growth, neoplasia, and the relationship of genetics to disease are discussed as general processes at a mechanistic level. These basic pathogenic processes are subsequently applied to the diseases occurring in complex organ systems such as the skin, endocrine, and reproductive systems, which serves as a bridge between Veterinary Pathology I and Veterinary Pathology II.

536 Veterinary Pathology II Second year, spring term. Credit five hours. Prerequisites: Veterinary Pathology I (535). Lectures, T R 9:05, W 11:15-12:20. Laboratories, T R 10:10-12:35. R. M. Lewis and staff. A systematic study of the diseases in each major organ system with emphasis on differential diagnostic features, and the correlation of disturbed function with morphologic change.

539 Introduction to Laboratory Animal Medicine Third year, fall term. Credit one hour. Prerequisites: Pathology 535 and 536. Lectures, M 10:10. F. W. Quimby and staff.

An introduction to the biology and diseases of common laboratory animal species including mice, rats, hamsters, guinea pigs, rabbits, and nonhuman primates. Exotic species including amphibians, reptiles, and exotic cats are also discussed. Practical means of diagnosis and treatment are emphasized. The course also provides an overview of the many aspects of laboratory animal medicine as practiced in academics, industry, and research.

571 Clinical Pathology J. Bentinck-Smith. See Clinical Course 571, p. 35.

635 Special Problems in Pathology Fall or spring term. By permission of instructor only. Hours to be arranged. R. M. Lewis and staff.

636 Wildlife Pathology Fall term. Credit two hours. Veterinary elective course for first-, second-, or third-year students. Lecture, W 8. Laboratory, W 2:05-4:25. J. M. King.

A presentation of the nature and causes of diseases of wild rabbits, opossums, squirrels, deer, certain waterfowl, and some other species. Emphasis on epizootiology, etiology, pathogenesis, diagnostic lesions, and effects on populations. Laboratory experience in specimen collection and necropsy techniques. Guest

lectures by members of the Department of Natural Resources on ecology and population dynamics.

637 Postmortem Pathology Fall term. Credit one hour. Veterinary elective course for first-, second-, or third-year students. Lecture, F 2. J. M. King.

A presentation of gross and microscopic lesions of diagnostic significance, employing color projection slides as illustrations. Emphasis on pathological and differential diagnosis of a wide spectrum of viral, metabolic, bacterial, parasitic, and other diseases.

638 Microscopy Fall or summer term. Credit three hours. Veterinary elective for any class. Lecture, W 8. Laboratory, W 7-9 p.m. R. Smith, J. Bentinck-Smith. An illustrated presentation of practical microscopy including light, darkfield, phase contrast, and photomicroscopy.

[640 Principles of Toxicological Pathology Fall term, odd-numbered years. Credit three hours. Elective for graduate students. Lectures, R 1:05-3:15. Laboratory, R 7-9 p.m. J. M. King.

The primary objective of this elective graduate-level course is to make the student aware of the problems and their solutions encountered in pathology as it applies to the field of toxicology with special emphasis on industrial toxicology and governmental regulations.]

641 Clinical Immunology Spring term. Credit one hour. Lecture, F 1:05-2 p.m. R. M. Lewis.

This course emphasizes the clinical aspects of fifteen specific diseases that are mediated by immunologic processes. Case material from the teaching hospital will be used to illustrate the presenting clinical signs, laboratory diagnostic methods, clinical course, therapeutic approaches, and eventual outcome of each disease under discussion. Student participation in the informal case discussions will be encouraged as a means of introducing students to the practice of veterinary medicine through case discussion and analysis. Training will also be provided in the use of the college's computerized biomedical information system and the hospital records system as a means to develop a critical case analysis, which serves as the basis for grading.

736 Pathology of Nutritional Diseases Spring term. Credit three hours. For graduate students in pathology or nutrition, and as elective course for veterinary students at sophomore level or above. Prerequisite: Pathology 535. Lecture, W 8. Laboratory, W 2:05-4:25. L. P. Krook.

739 Advanced Work in Pathology Fall or spring term. Credit one to three hours by arrangement. Properly prepared students may undertake special problems or receive special assignments. R. M. Lewis and staff.

740 Reproductive Pathology Spring term. Credit one or two hours. Elective. Prerequisite: Pathology 535. Lecture, W 8. Laboratory, W 9-11:30. K. McEntee.

749 Laboratory Animal Clinical Rotation Fall or spring term. Credit four hours. Limited to graduate stu-

dents in Laboratory Animal Medicine. Hours to be arranged. F. W. Quimby.

To gain clinical experience in the management and care of various laboratory animal species as well as the professional operation of a large animal facility, students are rotated through various areas, including the experimental surgery laboratory, animal diagnostic laboratory, and the animal facility.

788 Seminar in Surgical Pathology Fall or spring term. Credit one hour. Veterinary elective for third- and fourth-year veterinary students, graduate students, interns, and residents. Lecture/seminar, T 8. B. J. Cooper and staff.

The major objective of this course is to introduce the students to the gross and microscopic features of surgical pathology. Selected material from the Surgical Pathology Service is prepared in advance for independent review by the students. The material is presented in a slide seminar format by the students under the review of the faculty. Emphasis is placed on pathogenesis, etiology, and pathologic descriptions of the lesions. In addition, appropriate guest lecturers cover specific areas of interest and special topics not encountered in the departmental service programs.

789 Seminar in Necropsy Pathology Fall or spring term. Credit one hour. Veterinary elective for third- and fourth-year veterinary students, graduate students, interns, and residents. Lecture/seminar, R 8. J. King.

The major objective of this course is to introduce the student to the gross and microscopic features of necropsy pathology. Selected material from the Necropsy Service is prepared in advance for independent review by the students. This material is presented in a slide seminar format by the students under the review of the faculty. Emphasis is placed on pathogenesis, etiology, and pathologic description of the lesions. In addition, appropriate guest lecturers cover specific areas of interest and special topics not encountered in the departmental service programs.

790 Special Topics in Pathology Fall term. Credit one hour. Veterinary elective for third- and fourth-year veterinary students, graduate students, interns, and residents. Lecture/seminar, F 9. R. M. Lewis and staff.

The major objective of this course is to introduce the student to the gross and microscopic features of special topics in pathology, including neuropathology, ocular pathology, reproductive pathology, and the pathology of laboratory animals, avian and marine species. Selected material from the Surgical and Necropsy services is prepared in advance for independent review by the students. This material is presented in a slide seminar format by the staff. Emphasis is placed on pathogenesis, etiology, and pathologic description of the lesions. In addition, appropriate guest lecturers cover specific areas of interest and special topics not encountered in the departmental service programs.

791 Mechanisms of Disease Spring term of odd-numbered years. Credit three hours. Prerequisites: Veterinary Pathology I or equivalent, basic immunology, biochemistry, or permission of instructor. Lec-

tures, M W F 11:15. D. O. Slauson, R. R. Minor, G. L. Cockerell.

A lecture course in advanced general pathology emphasizing pathogenetic mechanisms involved in selected disease processes. Regulatory phenomena in cells and tissues, cellular pathology, developmental pathology, the nature and causes of disease, connective tissue responses, vascular and cellular events in inflammation, humoral amplification systems, molecular mechanisms in immunopathology and the biochemistry of hypersensitivity states, macrophage pathophysiology, membrane receptors of hemolympathic cells, molecular messages in cell-mediated immunity, etiopathogenesis of neoplasia, tumor biology and pathology, tumor-specific immune mechanisms.

[792 Immunopathology Spring term, even-numbered years. Credit three hours. Limited to graduate students, interns, and residents. Prerequisites: Veterinary Pathology I, Basic Immunology, or permission of instructor. Lecture M W F 10:10-11:15. G. L. Cockerell, B. J. Cooper, R. M. Lewis, D. O. Slauson. This advanced lecture course provides an in-depth discussion of naturally occurring immunologically mediated diseases of domestic animals. Extensive reference is made to analogous conditions in man and experimentally induced counterparts in animals. Primary emphasis is placed upon an understanding of the structural and functional tissue changes and their immunopathogenesis. Diseases are discussed on an organ system basis and also include discussions of immunodeficiencies, multisystem disorders, and systemic infectious diseases.]

795 Lectures in General Pathology Fall term. Credit two hours. Graduate students. Prerequisites: consent of instructor. Lectures, T R 9:05. D. O. Slauson.

This course consists of only the lecture portion of 535 without the laboratory. It is designed to accommodate certain graduate students who desire exposure to general pathology but lack histology experience. The subject matter covered is described under 535.

Microbiology

Professors J. H. Gillespie, chairman, M. Appel, S. G. Campbell, L. E. Carmichael, K. M. Lee, D. D. McGregor, F. M. Noronha, F. W. Scott, B. E. Sheffy; Professors Emeritus C. Boyer, D. W. Bruner; Associate Professors G. Lust, J. F. Timoney; Assistant Professors D. F. Antczak, R. G. Bell, G. M. Dunny; Senior Research Associates C. G. Fabricant, D. F. Holmes, M. J. Kemen, R. Wesley; Research Associates H. Greisen, S. Tsai. Joint appointees: Professors J. Fabricant, N. L. Norcross, G. C. Poppensiek, A. J. Winter; Associate Professors L. Leibovitz, P. Timoney; Assistant Professor V. Utermohlen. Courtesy Professors D. Axelrod, J. J. Callis, M. Essex, R. Gallo, C. J. Sinderman; Courtesy Associate Professor D. Morgan; Courtesy Assistant Professor C. Grant. Postdoctoral Fellows Y. Hoshino, C. Hui-Chou, M. Woan, S. Zoha; Graduate Assistants: K. Ashfaq, C. Baldwin, J. Barlough, S. Berghash, P. Christie, M. Conner, H. Davidson, J. Desi-

derio, D. Dueland, R. Pollock, C. Stoddart, R. Swanson, A. Wanger, R. Weiss, S. Youngren

Courses 515, 516, 517, and 518 are required in the veterinary core curriculum of the College of Veterinary Medicine and are given particularly for veterinary students. Students of other colleges must have permission to register in any of these courses. The other courses are not a part of the regular veterinary curriculum. They are available to graduate, veterinary, and undergraduate students who have obtained the proper prerequisite training and permission to register.

315 Basic Immunology, Lectures (also Bio S 305)

Fall term. Credit two hours. Prerequisite: a course in basic microbiology or special permission of the instructor. T R 9:05. 204 Stocking Hall. A. J. Winter. Course material covers current concepts in immunology at an elementary level with special emphasis on the biological functions of the immune response.

316 Basic Immunology, Laboratory (also Bio S 307)

Fall term. Credit two hours. Prerequisite: a course in basic microbiology or special permission of the instructor, concurrent enrollment in 315 recommended. Laboratories, T R 10:10-1:25. N. L. Norcross. Designed to illustrate immunological concepts presented in 315. Laboratory exercises are selected to familiarize students with basic humoral and cellular immune phenomena and to offer firsthand experience in immunological laboratory techniques.

317 Pathogenic Microbiology

Spring term. Credit four hours. Intended primarily for graduate and undergraduate microbiology majors. Enrollment limited to 48 students. Prerequisites: Microbiology 290, General Microbiology Lectures; Microbiology 291, General Microbiology Laboratory; and Microbiology 315, Basic Immunology. Lectures; or permission of the instructor. Suggested prerequisite: Microbiology 316, Basic Immunology, Laboratory. Lectures, T R 1:05-1:55. Laboratory, 2:05-4:25. G. M. Dunny, J. H. Gillespie and K. M. Lee.

This is a two-part course in medical microbiology, covering pathogenic bacteriology and virology. Lectures in bacteriology cover the major groups of bacterial pathogens and some of the important virulence mechanisms, as well as highlighting certain aspects of the normal flora, antibiotic therapy, and drug resistance that are relevant to the pathogenesis of bacterial disease. Virology lectures provide the student with an introduction to animal viruses, and discuss viral diseases, biochemistry, genetics, and replication. Laboratories emphasize and discuss techniques for isolation and culture of bacterial and viral pathogens, as well as demonstrating tissue culture and animal models for studying the pathogenesis of, and the immune response to infectious agents. One important principle emphasized in both portions of the course is that disease is the product of the interaction of the host, pathogen, and environment.

515 Veterinary Immunology Second year, fall term. Credit two hours. Lecture, T 1:05. Laboratory: section I, M 2:05-4:25; section II, W 2:05-4:25. S. G. Campbell.

The objective of the lectures is to give the veterinary

student a general outline of the mammalian and avian immune response. Emphasis will be on basic principles using examples from domestic animals, thereby stressing the applications of immunology to veterinary medicine. The laboratories illustrate concepts presented in the lectures and give the student firsthand experience of the simple immunological tests commonly used in veterinary practice. The more complex tests are presented as demonstrations. Discussion of the immunological aspects of clinical cases is incorporated whenever possible.

516 Veterinary Bacteriology and Mycology

Second year, fall term. Credit three hours. Lectures, T R 8:05-8:50. Laboratory: section I, F 2:05-4:25; section II, T 2:05-4:25. J. F. Timoney and G. M. Dunny. The lectures in veterinary bacteriology are intended to give the veterinary student an understanding of the circumstances and processes by which pathogenic bacteria and fungi enter and cause disease in the different organ systems of animals. Thus the student will be given the basis for an intelligent approach to the symptomatology, diagnosis, control, treatment, and prevention of bacterial and fungal diseases in domestic animals. Laboratory exercises will involve isolation, culture, and identification of the major groups of veterinary fungal and bacterial pathogens. These exercises will be supplemented with discussion-demonstration sessions with clinicians and diagnostic microbiologists, where recognition of these organisms in clinical specimens will be emphasized.

517 Veterinary Virology

Second year, spring term. Credit two hours. Lecture, F 9:05. Laboratory, M 2:05-4:25. F. W. Scott, L. Coggins.

This course will cover viruses that produce important diseases in animals. Topics of interest to the clinician to better understand and control these diseases will be discussed, including the basic properties of the virus, how the virus produces disease, and how the host responds to the virus infection. In the laboratory, emphasis will be on virological and serological procedures important for the diagnosis of various virus diseases.

518 Infectious and Zoonotic Diseases

Second year, spring term. Credit three hours. Lecture/demonstration/discussion, M 10:10-12:35. Lecture, W 1:05-1:55. D. F. Holmes (zoonotic diseases); G. C. Poppensiek (foreign animal diseases). Clinical signs, etiology, methods of differential diagnosis, pathogenesis, methods of spread, reservoir hosts, methods of prevention and control of diseases transmissible to man and foreign animal diseases which resemble indigenous, infectious diseases or present serious economic or public health threats to the United States.

605 Special Projects in Microbiology

Fall or spring term. Credit and hours to be arranged. S-U grades optional. Prerequisite: permission of the instructor. Microbiology staff.

The course is designed for undergraduates and as a veterinary elective. Preferably, students should have some background in pathogenic microbiology and immunology.

606 Small Animal Infectious Diseases Spring term. Credit two hours. S-U grades. Prerequisite: three semesters of the veterinary college curriculum or permission of the instructor. F 2:05. F. W. Scott and guest lecturers.

An elective course designed to give the future small animal practitioner a greater understanding of the infectious diseases of the dog and cat. Emphasis will be on etiology, pathogenesis, and prevention, including maternal immunity, vaccination, and hospital design as it relates to the spread of disease. The course will be coordinated with small animal medicine and microbiology core courses in order to prevent excess repetition. The diseases covered will include the diseases of dogs and cats that are caused by viruses, bacteria, fungi, and protozoa.

[607 Virus Diseases of Cattle Fall term. Credit one hour. Elective course for all veterinary students; nonveterinary students need permission of instructor. Not offered 1980-81.

A series of illustrated lectures and discussions on the cause, diagnosis, treatment, prevention, and control of viral diseases of cattle. Emphasis will be placed on recognition of virus diseases and practical procedures for diagnosis. Careful consideration will be given to the usefulness and hazards of control by vaccination.]

705 Advanced Immunology Lectures Spring term. Credit three hours. Prerequisite: an elementary immunology course or permission of the instructors. Offered alternate years. Next offered spring 1981. Lectures, M W F 9. D. F. Antczak, R. G. Bell, S. G. Campbell, N. L. Norcross, A. J. Winter and invited speakers.

The lectures will be presented in groups around a specified topic and are designed to cover, in depth, selected aspects of modern immunology. Lecture topics include antigens, immunoglobulins, the development and function of the B and T systems, the dynamics of the immune response, immunologic tolerance, protective immunity, and immunopathology.

[706 Advanced Immunology Laboratory Spring term. Offered alternate years. Next offered spring 1982. Credit three hours. Prerequisite: permission of the instructors. T R 1:30. A. J. Winter, 1982 coordinator; immunology staff.

A series of exercises in modern immunological techniques which include *in vitro* and *in vivo* assays of cellular and humoral immunity.]

707 Advanced Work in Bacteriology, Virology, or Immunology Credit and hours to be arranged. Prerequisite: permission of the instructor. S-U grades optional. Microbiology staff.

This course is designed primarily for graduate students with a good background in pathogenic microbiology and immunology. It may be elected by veterinary students who are properly prepared.

708 Animal Virology Lectures and Laboratory Demonstrations Spring term. Credit 3 or 4 hours. S-U grades unless otherwise requested. Prerequisite: Vet M 317, 517 or equivalent is essential. General knowledge of biochemistry and animal pathology helpful. Priority given graduate students. Offered alternate years. Next offered spring 1981. Lectures, M W F 11:15-12:05. Laboratory demonstrations, seminar-discussions (1 credit) optional, hours to be arranged. M. J. Appel, L. E. Carmichael, K. A. Schat, and staff. Principles of animal virus biology, including discussion of viral groups and animal viral pathogenesis.

709 Laboratory Methods of Diagnosis Fall and spring terms. Credit one to three hours by arrangement. S-U grades optional. Prerequisite: permission of instructor.

Instructions and practice in the application of microbiological and serological methods for the diagnosis of disease.

710 Microbiology Seminar Fall and spring terms. No credit. S-U grades. Required of all graduate students in microbiology and pathology. Hours to be arranged. D. F. Antczak and J. H. Gillespie.

711 Seminars on Current Topics in Immunology and Microbiology Fall, spring, summer. No credit. S-U grades. Time to be arranged. Immunology staff. The major objective is to provide a forum for graduate students to discuss journal articles as well as present research proposals and results.

Avian and Aquatic Animal Medicine

Professors B. W. Calnek, chairman, J. Fabricant, S. B. Hitchner, M. C. Peckham, C. G. Rickard; Adjunct Professor K. E. Wolf; Associate Professor L. Leibovitz; Courtesy Associate Professor H. A. Poston; Assistant Professors J. C. Carlisle, K. A. Schat; Senior Research Associate S. A. Haider; Research Associate R. Elston; Director of Laboratory W. F. Dean; Field Veterinarians G. B. Mitchell, T. S. Sandhu

The department maintains a poultry disease diagnostic clinic at the college and two regional diagnostic laboratories in different parts of the state. A diagnostic laboratory for aquatic animal diseases is also located at the college. These laboratories supply fresh material for teaching and research purposes. Adequate facilities existing at the college and the P. Philip Levine Research Laboratories for Avian Diseases provide opportunity for advanced study for properly qualified students. A disease-free breeding flock and a poultry disease isolation building are available for studies of most infectious and other diseases of poultry.

255 Poultry Hygiene and Disease Fall term, even years. Credit two hours. Prerequisites: Microbiology 290 and permission of the instructor. Minimum enrollment, 5 students; maximum enrollment, 15 students. Lecture and laboratory, R 2:05-4:25. M. C. Peckham. The nature of the infectious and parasitic diseases of poultry and the principles of hygiene applicable to poultry farming for the prevention and control of diseases.

555 Avian Diseases Second year, spring term. Credit two hours. Required of veterinary students. Lec-

tures, M 1:05, F 10:10. Laboratory, F 11:10-12:35. M. C. Peckham.

Diseases of domestic poultry and other birds are studied with special emphasis on differential diagnosis and control. Fresh and preserved specimens from the poultry diagnostic clinic are presented during the laboratory period.

671 Diseases of Aquatic Animals Spring term, odd years. Credit three hours. Elective course for all veterinary students and interested students from other colleges. General knowledge of microbiology and parasitology would be helpful, but is not required. Lecture and laboratory hours to be arranged. L. Leibovitz and J. Carlisle.

The basic study of this course relates to the etiology, pathology, diagnosis, prevention, and control of diseases of aquatic animals, with special emphasis given to the diseases of fin fish and to the relationship of the aquatic environment to diseases of aquatic animals.

672 Aquavet: Introduction to Aquatic Veterinary Medicine Four weeks of full-time instruction at Woods Hole, Massachusetts, immediately after the spring term. Elective course limited to 32 students from Cornell, University of Pennsylvania, and other colleges of veterinary medicine. Credit four hours. C. G. Rickard.

The course is sponsored by this college, the School of Veterinary Medicine at the University of Pennsylvania, and three marine science institutions at Woods Hole—the Marine Biological Laboratory, the Woods Hole Oceanographic Institution, and the Northeast Center of the National Marine Fisheries Service. It is designed to introduce veterinary medical students to medicine as it applies to aquatic animals. The marine environment is described and visited on field trips in the Woods Hole area. Certain aspects of the comparative anatomy, physiology, nutrition, microbiology, pathology, and medicine of a variety of marine and freshwater species are discussed. Some emphasis is placed on systems of aquaculture. The specific diseases of a few selected species are presented as examples, including the diseases of a crustacean, a shellfish, a finfish, and marine mammals. Students present seminars on appropriate topics.

[673 Diseases of Aquarium Fish] Spring term, even years. Credit three hours. Elective course for all veterinary students and interested students in other colleges. General knowledge of parasitology, microbiology, and pathology would be helpful, but is not required. L. Leibovitz.

The course is an introduction to the subject of diseases of aquarium fish, based upon the development of an understanding of normal and pathologic anatomy, a knowledge of specific disease entities, water quality, and nutritional requirements of aquarium fish. Students are taught to apply their knowledge in developing diagnostic skills and applying methods for prevention, control, and eradication of diseases of aquarium fish.]

770 Advanced Work in Avian Diseases Fall or spring term. By special arrangement with the instructor. Hours to be arranged.

771 Graduate Seminar in Diseases of Aquatic Animals

Fall or spring term. Credit one hour. Limited to graduate students of aquatic animal medicine. Seminar, W 8-9. J. Carlisle.

The purpose of this seminar is to increase awareness among faculty and graduate students of each other's work and to gain familiarity with pathologic processes in various species. This is accomplished through discussions of naturally occurring or experimental diseases, presented by each of the participants on a rotating basis. Slides or other materials are made available for study by the participants several days in advance of each seminar.

772 Advanced Work in Aquatic Animal Diseases

Fall or spring term. By special arrangement with the instructor. Hours to be arranged. L. Leibovitz.

Clinical Sciences

Medical Section: Professors B. C. Tennant (chief), A. deLahunta, F. H. Fox, J. M. Kingsbury, R. W. Kirk; Associate Professors G. R. Bolton, D. W. Scott (on leave 1980-81); Assistant Professors W. E. Hornbuckle, T. J. Kern, T. O. Manning, E. G. Pearson, J. F. Randolph, W. C. Rebhun, R. C. Riis, M. C. Smith, G. L. Spaulding (on leave 1980-81), M. E. White, J. F. Zimmer; Senior Clinician R. B. Hillman

Surgery Section: Associate Professors E. J. Trotter (chief), J. E. Lowe; Assistant Professors R. P. Hackett, H. J. Harvey, D. M. MacCoy, D. F. Smith, K. K. White

Therlogenology Section: Associate Professor C. E. Hall (chief); Professors K. McEntee, A. J. Winter; Assistant Professors N. A. LaFauce, D. P. Sponenberg

Anesthesiology Section: Professor C. E. Short (chief), Assistant Professor R. D. Gleed

Clinical Pathology Section: Professor J. Bentinck-Smith (chief); Visiting Professor J. W. Boyd; Adjunct Professor J. S. Nosanchuk; Assistant Professor J. T. Blue (on leave 1980-81)

Radiological and Physical Diagnostics: Professor F. A. Kalfelz (chief); Assistant Professors V. T. Rendano, Jr., B. J. Watrous; Lecturer G. D. Ryan

Equine Research: Associate Professor H. F. Schryver (director); Professor H. F. Hintz, Associate Professor J. E. Lowe

Mastitis Research: Professor N. L. Norcross (director); Associate Professor D. S. Postle

Mastitis Control: L. A. Wager (director); W. E. Linquist, supervisor of Ithaca Laboratory

The majority of the lectures and laboratory courses provided by the Department of Clinical Sciences are taught during the third year of the veterinary curriculum. The practical application of the students' basic knowledge in veterinary medicine to clinical diagnosis and therapy of diseases is emphasized at this time.

The fourth year is devoted to intensive training in clinical medicine and surgery. Students are assigned responsibility for patient diagnosis and care under the close supervision of the clinical faculty. The curriculum consists mostly of an assignment to clinical services throughout the teaching hospital. During the first semester of the fourth year, students rotate for short periods through all of the clinical and diagnostic services of the hospital. In the second semester, students elect specific clinical services to serve on for two- to four-week periods.

The teaching hospital is equipped with modern surgical and diagnostic services, including sophisticated radiologic facilities and diagnostic capabilities involving nuclear medicine. The clinical pathology laboratory is equipped with an automated analyzer for blood and other body fluids.

The teaching hospital consists of three clinics. The Small and Large Animal Clinics are both hospitals with complete facilities for intensive patient care. These clinics receive both out-patients and patients that are hospitalized. Patients come directly from local clientele or are referred to the teaching hospital from veterinary practitioners in New York State and predominantly the surrounding states of New England, New Jersey, and Pennsylvania. Students are assigned to the patients in the hospital where their activities are closely supervised by the clinical faculty. Students participate in the selection and evaluation of diagnostic and therapeutic procedures and assist in surgery. Although the final decision on all diagnostic and therapeutic procedures is made by the head of each service, active student participation is encouraged and is essential for optimum patient care and student education.

Proximity to an urban community and an agricultural college and well-stocked farming community offer the necessary variety of patients for study.

The Ambulatory Clinic provides veterinary service on the premises of the patient under conditions identical with those encountered in private large animal practice. Students perform physical examinations and treatment under the supervision of a clinical faculty member. The farming community adjacent to the veterinary college is largely devoted to dairy farming, providing ample material related to obstetrics and diseases of dairy cows. In addition, the New York State Mastitis Control Program maintains a central field laboratory at the college. Fourth-year students accompany and assist veterinarians in field trips that deal with all phases of bovine mastitis and related dairy management procedures.

Courses

475 Health and Diseases of Animals Spring term. Credit three hours. For students in undergraduate colleges. Not open to first-year students or to those who have had no course in animal husbandry. Lectures, M W F 11:15. C. E. Hall and guest lecturers from veterinary college faculty. Diseases of domestic animals, chiefly those related to food and fiber production, are discussed with specific examples and models. Causes, prevention and control, and importance to human health are emphasized.

546 Clinical Orientation Third year, fall term. Credit one hour. S-U grading. One afternoon a week to be arranged. A. deLahunta.

The objectives of the course are to familiarize the students with the operation of the various clinical services in the teaching hospital, to permit the students to have direct involvement in the various aspects of patient care, and to provide some relevant experience to their didactic course work.

550 Applied Radiation Biology and Veterinary Nuclear Medicine Third year, fall term. Credit one hour. M 10:10. B. J. Watrous.

Lectures on the nature of radiation effects on cells and tissues and diagnostic and therapeutic applications in veterinary medicine.

560 Clinical Methods Second year, fall term. Credit two hours. Lecture, M 8. Laboratory, M T W or F 2:05-4:25. D. F. Smith and faculty of surgery and medicine sections.

Restraint methods and clinical techniques used in physical examinations for diagnosis and therapeutics of small and large domestic animals. The laboratories utilize practical demonstrations, and students participate in examinations of normal animals and selected clinical cases of the diseased animals.

561 Obstetrics and Reproductive Diseases Second year, spring term. Credit three hours. Lectures, T 8, W 10:10. Laboratory, W or R 2:05-4:25. Fee, \$15. N. A. LaFauce.

A presentation of applied physiology and endocrinology of the male and female reproductive tract; congenital, infectious, endocrine, and miscellaneous diseases of the genital organs causing infertility and sterility, and artificial insemination.

562 Obstetrics and Reproductive Diseases Third year, fall term. Credit three hours. Lectures, T R 10:10. Laboratory, W or R 2:05-4:25. Fee, \$15. N. A. LaFauce.

Pregnancy diagnosis, diseases of the gestation period including teratology and abortion, parturition, dystocia, obstetrical operations, and postpartum diseases are presented.

563 Large Animal Medicine Third year, fall term. Credit four hours. T W R F 9:05. F. H. Fox, R. B. Hillman, E. G. Pearson, W. C. Rebhun, M. C. Smith, B. C. Tennant, M. E. White.

Lectures or recitations covering physical diagnosis, therapeutics, and some diseases of large animals. In addition to the instruction provided by the department staff, M. C. Smith will give lectures concerning poisonous plants.

564 Large Animal Medicine Third year, spring term. Credit four hours. M T W R 9:05. F. H. Fox, R. B. Hillman, E. G. Pearson, W. C. Rebhun, M. C. Smith, B. C. Tennant, M. E. White. A continuation of 563.

565 Large Animal Surgery Third year, spring term. Credit three hours. Lectures, M W F 11:15. K. K. White, R. P. Hackett, J. E. Lowe, D. F. Smith. Lectures designed to impart a general knowledge of

the principles of surgery, surgical pathology, therapeutics, operative techniques, and lameness of large domestic animals.

566 Radiology Third year, spring term. Credit two hours. M 9, F 10:10. V. T. Rendano, Jr., B. J. Watrous, G. D. Ryan. Fundamentals of radiographic diagnosis, radiation therapy, and radiation safety.

567 Clinical Nutrition Third year, spring term. Credit two hours. Required of veterinary students. T 11:15, R 1:05. F. A. Kallfelz. Lectures and demonstrations reviewing basic principles of nutrition and covering nutritional and metabolic disease problems of domestic animals. The use of nutritional principles in the prevention, treatment, and management of diseases of domestic animals is stressed. Case material from the teaching hospital is used whenever appropriate.

568 Veterinary Medical Orientation (also Preventive Medicine 568) First year, fall term. Credit two hours. T 8 A. deLahunta, R. H. Cypess, and guest lecturers from Cornell faculty and other institutions. This course exposes students to the areas of clinical medicine that relate to the material studied in the gross and developmental anatomy courses. Examples include regional radiographic diagnoses and surgery; cardiac examination, including auscultation; ophthalmic examination, including the use of the ophthalmoscope; and the physical examination and restraint of small animals. Lectures and discussion of veterinary medical ethics; veterinary jurisprudence; the organization, function, and goals of the College of Veterinary Medicine; and topics related to the interaction of the veterinarian in today's society.

569 Veterinary Medical Orientation First year, spring term. Credit one hour. M 8. W. C. Rebhun. This course exposes the student to clinical large animal medicine as it relates to material simultaneously studied in the basic sciences of anatomy, histology, physiology. Physical examination of large animals, basic restraint of large animals, and regional anatomy of specific clinical entities are discussed. Examples of histology versus histopathology are used to illustrate some discussions.

571 Clinical Pathology Third year, fall term. Credit two hours. Prerequisites or corequisite: Pathology 535 and 536. Students from other colleges may be admitted by special permission without these prerequisites. Lectures, M 9:05, F 10:10. Laboratory, T 2:05-4:25 or W 10:10-12:35. Laboratory omitted when Friday lecture is given. J. Bentinck-Smith, J. W. Boyd. This course is concerned with the application of the techniques of hematology, urinalysis, cytology, semen examinations, and other laboratory procedures in diagnosis; the biochemical changes in the blood and other fluids in disease; and the study of pathological alterations in clinical cases.

572 Senior Seminar Fourth year, fall and spring terms. Fourth-year students are required to attend these conferences. First-, second-, and third-year stu-

dents and all staff members are also invited to attend. F 7:45. D. S. Postle, chairman.

The aim of this course is to give the student the responsibility and opportunity of selecting and studying a disease entity based on a case or series of cases, or to give the student the responsibility and opportunity of conducting a short-term, clinically-oriented research project under the direction of a faculty member. In either case, an oral report will be presented at a Friday seminar. A written report also will be submitted after the seminar. All participants are encouraged to foster an atmosphere in which discussion, exchange of ideas, and the airing of controversial opinions might flourish.

579 General Medicine Second year, spring term. Credit two hours. B. C. Tennant and faculty of section of medicine.

An introduction to veterinary internal medicine with emphasis given to the comparative aspects of disease and to the pathophysiologic basis of the cardinal clinical manifestations of organ system dysfunction.

581 Nutrition First year, fall term. Credit two hours. Lecture, M 10:10-11. Laboratory, T 2:05-4:25. H. F. Hintz.

Function of nutrients, sources of nutrients, and identification and evaluation of feedstuffs and feeding programs for livestock and companion animals will be discussed.

582 Large Animal Surgical Techniques Third year, spring term. Credit one hour. M T W R 2:05-4:25 (divided in groups A-D). R. P. Hackett, J. E. Lowe, K. K. White, C. E. Short, D. F. Smith.

This course is designed to impart fundamental skills in preoperative and postoperative care, anesthesia, aseptic technique, and surgical technique by closely supervised operations on the large domestic animals.

583 Small Animal Medicine and Surgery Third year, fall term. Credit three hours. Prerequisites:

Pathology 536, Clinical Pathology 571, Pharmacology 528. T R F 11:15. R. W. Kirk and faculty of the medicine, surgery, and anesthesiology sections.

A comprehensive course in medical and surgical diseases of small animals arranged and presented by systems.

584 Small Animal Medicine and Surgery Third

year, spring term. Credit eight hours. Hours to be arranged. R. W. Kirk and faculty of the medicine, surgery, and anesthesiology sections. A continuation of 583.

586 Small Animal Surgical Exercises Third year, spring term. Credit two hours. M T W or R 1:05-5:20.

D. M. MacCoy and faculty of the surgery and anesthesiology sections.

587 General Surgery and Anesthesiology Third year, fall term. Credit three hours. Prerequisite: Pathology 536. Fee, \$75. M T R 8. E. J. Trotter and faculty of the surgery and anesthesiology sections.

The principles of surgery are given, including aseptic technique, tissue considerations and healing, indications for surgery, types of wounds, and prevention and

treatment of surgical complications. The general principles of anesthesia are presented, including the various techniques and pharmacological agents, as well as treatment of shock and preoperative and post-operative patient support.

675 Special Problems in Large Animal Medicine

Fall or spring term. By permission of the instructor only. Hours to be arranged.

676 Special Problems in Large Animal Surgery

Fall or spring term. By permission of the instructor only. Hours to be arranged.

677 Special Problems in Large Animal Obstetrics

Fall or spring term. By permission of the instructor only. Hours to be arranged.

679 Dairy Herd Health

Fall term. Credit one hour. Elective course for third- and fourth-year veterinary students. W 7. E. G. Pearson, M. E. White. The objective of this course is to teach veterinary students who are interested in dairy-oriented practice the common causes of cattle disease and measures required to prevent these diseases.

680 Poisonous Plants

Fall term. Credit one hour. Elective course for all veterinary students. W 8. R. B. Hillman, M. C. Smith. Lectures and field trips will be utilized to establish identification of toxic plants and to acquaint students with criteria for establishing a diagnosis of plant poisoning and instituting rational therapy.

681 Horse Health Management

Spring term. Credit one hour. Elective course for third- and fourth-year veterinary students who have special interest in horses. W 8. R. B. Hillman. Prevention of horse diseases from foaling through adulthood by management practices, nutrition, and vaccination procedures will be emphasized.

682 Large Animal Internal Medicine

Fall term. Credit two hours. Elective course for third- and fourth-year veterinary students. W 8. B. C. Tennant. Selected topics of large animal internal medicine using lectures and case presentation. Emphasis will be given to the major diseases of the cardiovascular, respiratory, and gastrointestinal systems.

683 Practice and Personal Affairs Management

Fall and spring terms. Credit one hour. Elective for second-, third-, or fourth-year veterinary students. One day a week in elective block time or condensed programs offered on weekends or evenings. C. E. Short. The objective is to familiarize the student with basic concepts of effective practice management. Topics: practice types and philosophy, client relations, medical records, legal aspects of veterinary medicine, fiscal affairs, purchasing, records and forms, personal financial affairs management, taxes, and insurance.

684 Horse Lameness

Spring term. Credit one hour. Offered to third-year veterinary students. W. 11:15. J. E. Lowe.

This course is designed to acquaint third-year students with the principles of lameness diagnosis. Phys-

ical examination for soundness of the musculoskeletal system is stressed through lecture demonstration and assigned case material from the Large Animal Hospital and Equine Research Park. Motion pictures and television tapes are used each week to illustrate principles of diagnosis and specific types of lameness.

686 Goats: Management and Diseases

Spring term. Credit one hour. Elective course for second-, third-, and fourth-year veterinary students. W 7. M. C. Smith. Common nutritional, reproductive, medical, and surgical problems of goats will be emphasized.

687 Diseases of Swine

Spring term. Credit one hour. Elective course for fourth-year veterinary students. R 8. F. H. Fox. Detailed consideration of most diseases affecting swine. There will be more in-depth discussion than is possible in Diseases of Large Animals. Guest lecturers will discuss their specific areas of concern and the field problems that may be encountered in New York State.

688 Special Problems in Small Animal Medicine

Fall or spring term. By permission of instructor only. Hours to be arranged.

689 Special Problems in Small Animal Surgery

Fall or spring term. By permission of instructor only. Hours to be arranged.

690 Veterinary Dermatology

Fall term. Credit one hour. W 8. R. W. Kirk. This course will emphasize dermatologic conditions of small and large animals not covered in the core curriculum, along with dermatopharmacology. Course grade will be based on a paper or final examination.

691 Advanced Large Animal Internal Medicine Problems

Fourth year, spring term. Credit two hours. Lecture, F 6:55-7:45 a.m. Laboratory, S 7-9 a.m. E. G. Pearson, W. C. Rebhun, and faculty of medicine section. This course offers the fourth-year veterinary students interested in large animal medicine advanced training in internal medicine. The course will go into more detail on working up problematic large animal medicine cases than time will allow in the core curriculum. The laboratory will allow students to perform diagnostic procedures they may have had only a random chance to do in the clinics.

778 Gastroenterology Conference

Fall and spring terms. Credit one hour. R 1:05. B. C. Tennant.

779 Veterinary Gastroenterology

Spring term. Credit two hours. W 8-9; F 2-3. B. C. Tennant and others. Pathogenesis, diagnosis, and treatment of the major medical diseases of the gastrointestinal tract of domestic animals.

781 Advanced Work

Fall and spring terms. Five or more hours a week throughout the term. Hours to be arranged. By permission of instructor only. Research in medicine and surgery of small animals.

782 Ophthalmology Spring term. Credit one hour. W. C. Rebhun, R. C. Riis, T. J. Kern.
This is an elective course for students who have completed the basic course. Special lectures include bovine ophthalmology, equine ophthalmology, keratopathies, retinopathies, special diagnostics.

Reproductive Pathology K. McEntee. See Pathology 740, p. 29.

Clinical Service Courses

Fall term—required rotation. Fourth-year students work in groups of four to five for three-week periods on the various services in the following clinical areas.

573 Large Animal Clinic Credit three hours. 2 surgical services and 1 medical service. K. K. White.

575 Ambulatory Clinic Credit three hours. One-week periods in 3 ambulatory services and 1 mastitis service. M. C. Smith.

577 Diagnostic Services Credit three hours. Clinical pathology, pathology, radiology. J. Bentinck-Smith.

589 Small Animal Medical Clinic Credit three hours. 2 medical services and 1 ophthalmology-dermatology service. G. R. Bolton.

591 Small Animal Surgical Clinic Credit three hours. 2 surgical services and 1 anesthesiology service. E. J. Trotter.

Spring term—elective blocks. Fourth-year students may select from the following courses. Each course consists of a two- or four-week period of intensive study in that subject. The term is divided into five periods of four weeks duration. Each student must select courses for four of these time periods. A course may also be selected for the fifth period or it may be used as a free period. Only in special circumstances may a course be repeated.

540 Clinical Pathology Credit two hours. J. Bentinck-Smith, F. J. Drazek, J. D. Henion, G. A. Maylin, J. E. Post, S. J. Shin.

541 Necropsy Clinic Credit two hours. J. M. King.
This course is designed to introduce the student to necropsy technique, observation and recording of lesions associated with disease processes, and the commonly employed diagnostic procedures utilized to provide final diagnosis. Emphasis is placed both on achieving correct diagnoses as well as understanding the pathophysiology of disease processes encountered in veterinary medicine.

547 Practice Management Experience at the Small Animal Hospital Credit two hours. A. deLahunta.

570 Theriogenology Credit four hours. R. B. Hillman.

574 Large Animal Surgical Clinic Credit four hours. E. J. Trotter.

576 Ambulatory Clinic Credit four hours. M. C. Smith.

578 Anesthesiology Clinic Credit two hours. C. E. Short.

580 Radiology Clinic Credit two hours. V. T. Rendano, Jr., B. J. Watrous.

590 Small Animal Medical Clinic Credit four hours. G. R. Bolton.

592 Small Animal Surgical Clinic Credit four hours. E. J. Trotter.

593 Ophthalmology Clinic Credit two hours. R. C. Riis.

594 Large Animal Medical Clinic Credit four hours. W. C. Rebhun.

595 Rotating Clinic Credit sixteen hours. A. deLahunta.

596 Opportunities in Veterinary Medicine Credit four hours. Curriculum Committee.

598 Dermatology Clinic Credit two hours. R. W. Kirk.

Diagnostic Laboratory

Professor R. H. Cypess, director; Associate Professors D. H. Lein, assistant director (head, Field Services), G. A. Maylin (head, Division of Toxicology), P. J. Timoney; Assistant Professors J. D. Henion, R. H. Jacobson, T. J. Reimers (director, Endocrinology Laboratory); Directors of Laboratory Operations S. J. Shin, J. M. DeBoy; Research Assistant J. Fairbrother; Senior Extension Associate J. N. Davidson; Joint Appointee J. R. Georgi

The Diagnostic Laboratory consists of three divisions: Acute and Chronic Diseases, Field Services, and Toxicology. The mission of the laboratory is the prevention and control of the diseases of animals with particular emphasis on diseases of food and fiber species and the zoonoses. The Diagnostic Laboratory serves as a resource center whose concerns are diagnostic service for the veterinary profession and animal industry, epidemic investigation, development and evaluation of new diagnostic tests, preventive medicine, and extension functions. Its faculty participate collaboratively in the teaching, service, and research activities in the various departments throughout the college.

The Diagnostic Laboratory maintains laboratories of virology, bacteriology, parasitology, immunology, endocrinology, epidemiology, immunopathology, and toxicology. Last year over 300,000 tests were run for a wide range of diagnostic procedures, in addition to the drug testing described below. This volume is increasing rapidly as the enlarged program becomes effective.

The toxicology section of the Diagnostic Laboratory is involved in various aspects of clinical and environmental toxicology. In addition, it operates the Equine

Drug Testing and Research Program, which assists the racing industry and certain other equine activities in the control of the use of drugs that might influence the performance of horses. A broadly based research program studies the metabolism and pharmacodynamics of drugs, and develops methods for detecting them and their metabolites in blood and other body fluids. Analytical methods employ gas chromatography, mass spectrography, x-ray fluorescence, computer analysis and other sophisticated technology to achieve detection of drugs at very low levels of concentration. Satellite testing laboratories are established at the harness tracks in the state where all racing animals are examined by a prerace blood test. Over 151,000 tests were done last year, 75 percent of them prerace tests.

Preventive Medicine

Professors R. H. Cypess, chairman; J. R. Georgi, J. H. Whitlock (emeritus); Adjunct Professor M. J. Torres-Anjel; Associate Professor D. G. Lindmark; Adjunct Associate Professors R. Fayer, G. L. Seawright; Assistant Professors J. G. Babish, H. N. Erb, R. H. Jacobson, T. J. Reimers; Joint Appointees G. C. Poppiensiek, E. W. Cupp, R. D. Smith; Research Associates R. B. Grieve, D. Wassom; Senior Extension Associate, J. N. Davidson; Postdoctoral Fellow B. O. Brooks; Visiting Fellow M. E. Georgi

This department was organized in the fall of 1977 to emphasize three areas of study: (a) epidemiology, biostatistics, and public health, (b) animal health management, and (c) environmental health. In 1978 master's and Ph.D. concentrations in epidemiology were approved. The Section of Parasitology and International Health, added to the department in 1979 as part of the college's reorganization plan, is responsible for instruction in both veterinary parasitology and training of professional parasitologists. Specialized areas of research include diagnostic parasitology, immunoparasitology, parasite biochemistry and chemotherapy, bionomics, and systematics. The section offers both master's and Ph.D. degrees in parasitology.

330 The Population Biology of Health and Disease

Spring term. Credit three hours. Elective. Prerequisite: one year of biology. Lectures, T R 11:15. Laboratory, T 2-4:30. J. H. Whitlock, J. R. Georgi. An integrative study of the problems of health and disease in populations of humans, of plants, and of animals. Examples are drawn from the whole symbiotic spectrum. Parasitoses that result in disease are demonstrated to have comparable structures and functions. These structures and functions are examined as adaptive phenomena from ecological, genetic, sociological, and economic points of view. In the recitation-demonstrations specific diseases or symbioses are presented either through the medium of motion pictures or by specialists (such as epidemiologists, virologists, plant nematologists, and insect pathologists) from the Cornell staff as a basis for discussion.

331 Medical Parasitology Fall term. Credit two hours. Prerequisite: zoology or biology. Lectures, M F

9:05. R. M. Cypess, J. R. Georgi, E. W. Cupp, D. G. Lindmark, and staff.

Identical to and concurrent with 510, Animal Parasitology, except for the last eight lectures, which are devoted to special consideration of human parasitic diseases by Professor Cypess. Students desiring practical exercises may elect 332, Systematics and Bionomics of Animal Parasites.

332 Systematics and Bionomics of Animal Parasites

Fall term. Credit one hour. Prerequisite: 510 Animal Parasitology or 331 Medical Parasitology (may be taken concurrently). Laboratory, M 2:05. J. R. Georgi, E. W. Cupp, D. G. Lindmark, and staff. Identification, taxonomy, ecology, and life history of arthropod, protozoan, and helminth parasites of domestic animals with practical exercises in necropsy technique, isolation and preparation of specimens, culture of free-living stages, modern microscopic and ultramicroscopic technique, and library research.

440 Parasitic Helminthology Spring term, alternate years. Credit three hours. Prerequisites: one year of biology and Vet M 330 or equivalent.

Limited to 10 students. Two laboratory hours to be arranged; one additional hour by appointment. J. R. Georgi.

A study of the systematics and bionomics of parasitic plathelminthes and nematohelminthes with emphasis on the experimental methodology of modern helminthology. Laboratory exercises include preparation of specimens for microscopic examination, identification of specimens, artificial culture and manipulation of life cycles, and investigation of host-parasitic interactions. A term report based on experimental findings and a review of the relevant literature is required.

510 Animal Parasitology

Second year, fall term. Credit two hours. Prerequisite: zoology and biology. Lecture, M F 9:05. J. R. Georgi, E. W. Cupp, D. G. Lindmark, and staff.

A systematic study of arthropod, protozoan, and helminth parasites of vertebrate animals with particular emphasis on the bionomics, epidemiology, and control of parasitisms of veterinary and public health importance. Presented in conjunction with 511, Diagnostic Parasitology.

511 Diagnostic Parasitology Second year, fall term. Credit two hours. Laboratories, M F 10:10-12:25. J. R. Georgi and staff.

Practical exercises in the antemortem and postmortem diagnosis of arthropod, protozoan, and helminth parasitisms of domestic animals and interpretation of their pathogenetic significance. Presented in conjunction with 510, Animal Parasitology.

520 Preventive Medicine in Animal Health Management

Third year, spring term. Credit two hours. Two lectures, hours to be arranged. H. N. Erb. Topics will include: critical evaluation of the literature, economics, record keeping, monitoring production and disease, and preventive herd health including quarantine, vaccination, animal management, and physical environment.

545 Principles of Epidemiology First year, spring term. Credit two hours. Two lectures, hours to be arranged. H. N. Erb.

This course includes a review of the basic concepts of acute and chronic disease epidemiology utilizing descriptive, analytical, and experimental techniques. The application of epidemiologic methods to the investigation of disease outbreaks and to the recognition, prevention, and control of diseases will be discussed.

568 Veterinary Medical Orientation First year, fall term. Credit two hours. Lectures, T R 8. R. H. Cypess, H. N. Erb, and guest lecturers.

This course exposes students to the areas of clinical medicine that relate to the material studied in the gross and developmental anatomy courses. Examples include regional radiographic diagnoses and surgery; cardiac examination, including auscultation; ophthalmic examination, including the use of the ophthalmoscope; and the physical examination and restraint of small animals. There will be lectures and discussion of veterinary medical ethics, veterinary jurisprudence, the organization, function, and goals of the College of Veterinary Medicine, and the interaction of the veterinarian in today's society. A series of lectures will deal with critical medical literature evaluation, including basic statistical terms and concepts to which readers are exposed.

660 Safety Evaluation In Public Health Spring term. Credit two hours. Elective for veterinary students (all years) and graduate course. Prerequisites: an introductory-to-intermediate level course in biology, biochemistry, or physiology; a concurrent or prior course in toxicology would be helpful. Lecture F 2:05-4:25. J. G. Babish.

The application of toxicologic methods for assessing chemical hazards to populations has become a major role of toxicologists in industry and government today. In this course, current methodologies in risk assessment will be presented with emphasis on the interpretation of data in terms of public health effects. Topics covered will include (i) the concept of a safe level, (ii) standards for acceptable testing, (iii) good laboratory practices and government regulations, (iv) testing procedures used in safety evaluation, and (v) monitoring human populations. Students will be evaluated on their ability to interpret data from animal studies and to estimate risks of human exposure.

662 Advanced Epidemiology Spring term. Credit two hours. Elective for third- and fourth-year veterinary students and also a graduate course. Prerequisites: 545, Principles of Epidemiology, and Statistics and Biometry 601 (College of Agriculture and Life Sciences). Lecture, hours to be arranged.

Concepts introduced in Principles of Epidemiology are further developed. Topics will include design and analysis of case-control and cohort studies, adjustment for confounding variables, sample size determinations, clinical trials, and medical geography. Recent articles in environmental health, cancer, nutrition, and infectious diseases will be used as illustrations. Students will be expected to prepare term papers for delivery in class.

737 Advanced Work In Animal Parasitology Fall or spring term. Credit one to three hours by arrangement. For advanced undergraduate and graduate students. Prerequisite: Pathology 330 or 537. J. R. Georgi, J. H. Whitlock.

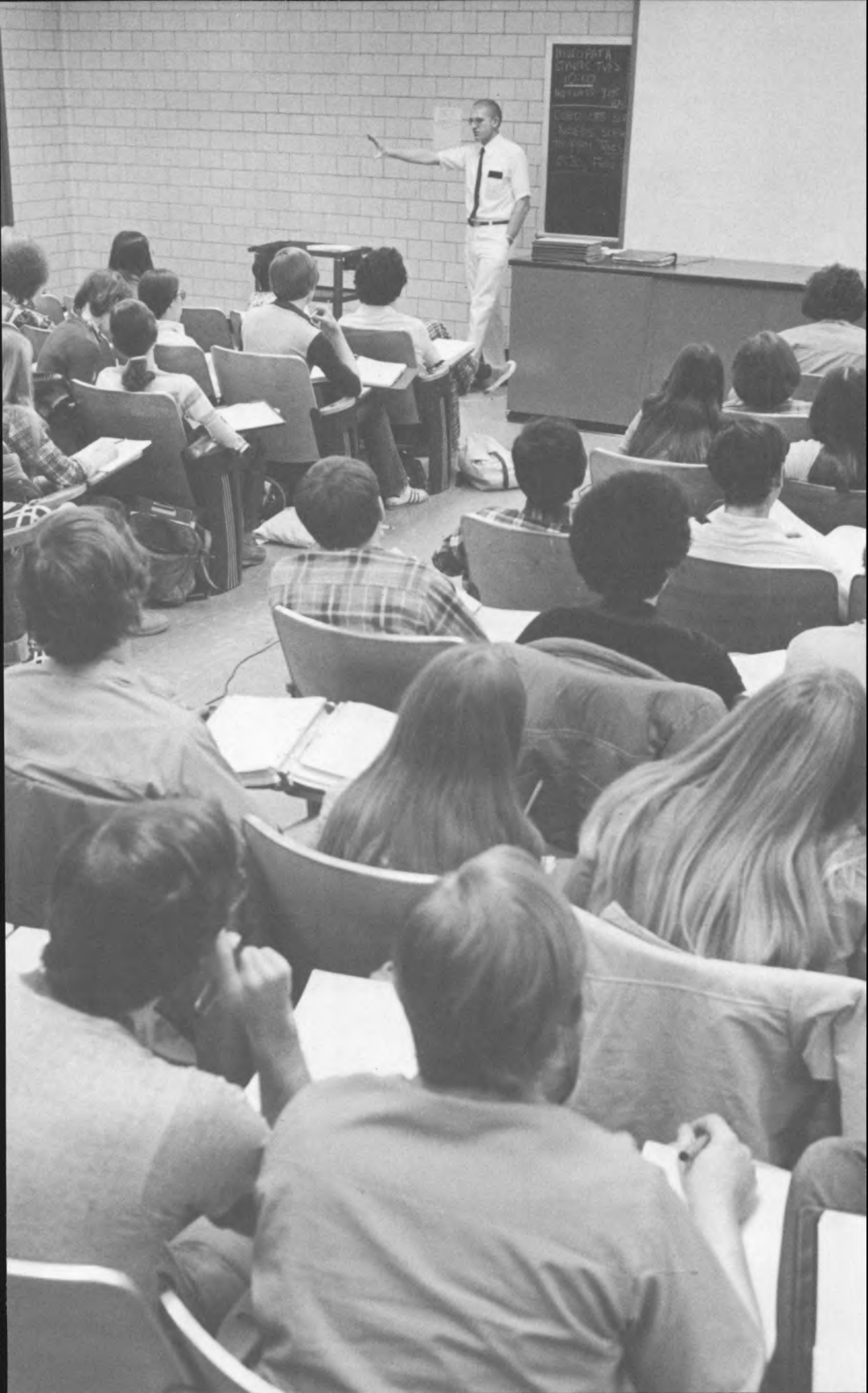
Special problems in parasitology and symbiology.

765 Structure and Function of Protozoan Parasites Spring term, alternate years starting 1981. Credit two hours. Lecture T R 3:05-3:55. D. G. Lindmark.

This course will encompass the metabolism and the structural and functional relationships central to parasite metabolism. An integral part of the course will involve an in-depth treatment of research techniques unique to working with and understanding parasite biochemical cytology. Where appropriate, the mode of action of chemotherapeutic agents used in the treatment of parasite-caused diseases will be investigated. In addition to discussion sessions and lectures, guest speakers will present current problems in their areas of expertise.

767 Immunoparasitology Spring term, alternate years starting 1981. Credit two hours. Lecture, hours to be arranged. R. H. Jacobson.

This course studies the immune response to representative helminth and protozoan parasites of vertebrate hosts. Emphasis will be placed on the physiological and immunological relationships that play a role in regulation of parasitic infections. *In vitro* correlates of immunity to parasites, immunodiagnosis, and parasite-induced immunopotential and suppression will be discussed.



Schedules 1980-81

These schedules are subject to change.

First Year

First Term

September 2-December 10, 1980

Examination period: December 13-22, 1980

Hour	Monday	Tuesday	Wednesday	Thursday	Friday
8:00-8:50	502 Developmental and Cytology Anatomy lecture	525 Biochemistry lecture	Elective or free period	525 Biochemistry lecture	7:45-8:45 572 Senior Seminar
9:05-9:55	525 Biochemistry lecture	9:05-11:30: 500 Gross Anatomy laboratory	525 Biochemistry lecture	9:05-11:30: 500 Gross Anatomy laboratory	525 Biochemistry lecture
10:10-12:05	10:10-11: 581 Nutrition lecture 11:15-12:05 545 Epidemiology	12-12:50: 568 Veterinary Medical Orientation	10:10-12:35: 502 Developmental and Cytology Anatomy laboratory	11:45-12:35: 568 Veterinary Medical Orientation	10:10-12:35: 500 Gross Anatomy laboratory
1:05-1:55	500 Gross Anatomy lecture		545 Epidemiology		
2:05-4:25	500 Gross Anatomy laboratory	581 Nutrition lecture or laboratory	Elective or free period	502 Developmental and Cytology Anatomy laboratory	Elective or free period

Second Term

February 2-May 16, 1981

Examination period: May 19-28, 1981

Hour	Monday	Tuesday	Wednesday	Thursday	Friday
8:00-8:50	569 Veterinary Medical Orientation	504 Neuroanatomy lecture	Elective	501 Gross Anatomy lecture	7:45-8:45: 572 Senior Seminar
9:05-9:55	526 Physiology lecture	503 Histology and Organology Anatomy lecture	526 Physiology laboratory; section I	526 Physiology laboratory; section II	
10:10-12:35	504 Neuroanatomy laboratory	501 Gross Anatomy laboratory			503 Histology and Organology Anatomy lecture
1:05-1:55		526 Physiology lecture			526 Physiology lecture
2:05-4:25	501 Gross Anatomy laboratory	503 Histology and Organology Anatomy lecture	501 Gross Anatomy laboratory	501 Gross Anatomy laboratory	Elective or free period

Second Year

First Term

September 2–December 10, 1980

Examination period: December 13–22, 1980

Hour	Monday	Tuesday	Wednesday	Thursday	Friday
8:00–8:50	560 Clinical Methods lecture	516 Bacteriology and Mycology lecture	Elective or free period	516 Bacteriology and Mycology lecture	7:45–8:45: 527 Senior Seminar
9:05–9:55	510 Animal Parasitology lecture	535 General Pathology lecture	9:05–12:35: 527 Physiology laboratory; section II Elective or free period; section I	535 General Pathology lecture	510 Animal Parasitology lecture
10:10–12:35	511 Diagnostic Parasitology laboratory	535 General Pathology laboratory		535 General Pathology laboratory	511 Diagnostic Parasitology laboratory
1:05–1:55	527 Physiology lecture	515 Immunology lecture	527 Physiology lecture	527 Physiology laboratory section I Elective or free period; section II	527 Physiology lecture
2:05–4:25	560 Clinical Methods laboratory; section A or 515 Immunology laboratory; section I	516 Bacteriology and Mycology laboratory; section II or 560 Clinical Methods laboratory; section C	515 Immunology laboratory; section II or 560 Clinical Methods laboratory; section B		516 Bacteriology and Mycology laboratory; section I or 560 Clinical Methods laboratory; section D

Second Term

February 2-May 16, 1981

Examination period: May 19-28, 1981

<i>Hour</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>
8:00-8:50	528 Pharmacology lecture	561 Obstetrics lecture	Elective or free period	528 Pharmacology lecture	7:45-8:45: 572 Senior Seminar
9:05-9:55	579 General Medicine lecture	536 Special Pathology lecture	579 General Medicine lecture	536 Special Pathology lecture	517 Virology lecture
10:10-12:35	518 Infectious and Zoonotic Diseases laboratory	536 Special Pathology laboratory	10:10-11: 561 Obstetrics lecture 11:15-12:05: 536 Special Pathology lecture	536 Special Pathology laboratory	555 Avian Diseases laboratory
1:05-1:55	555 Avian Diseases lecture	528 Pharmacology lecture	528 Pharmacology lecture	518 Infectious and Zoonotic Diseases laboratory	528 Pharmacology lecture
2:05-4:25	517 Virology laboratory and discussion	528 Pharmacology laboratory	561 Obstetrics laboratory; section I or Elective; section II	561 Obstetrics laboratory; section II or Elective; section I	Elective or free period

Third Year

First Term

September 2-December 10, 1980

Examination period: December 13-22, 1980

<i>Hour</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>
8:00-8:50	587 General Surgery	587 General Surgery	Elective	587 General Surgery	7:45-8:45: 572 Senior Seminar
9:05-9:55	571 Clinical Pathology lecture	563 Large Animal Medicine	563 Large Animal Medicine	563 Large Animal Medicine	563 Large Animal Medicine
10:10-11:00	550 Nuclear Medicine	562 Obstetrics lecture	10:10-12:35: Clinical Pathology laboratory; section B;	562 Obstetrics lecture	571 Clinical Pathology lecture
11:15-12:05	539 Laboratory Animal Medicine	583 Small Animal Medicine and Surgery	or Elective; section A	583 Small Animal Medicine and Surgery	583 Small Animal Medicine and Surgery
1:05-1:55		529 Clinical Pharmacology		529 Clinical Pharmacology	
2:05-4:25	546 Clinical Orientation; section I	546 Clinical Orientation; section 2 or Clinical Pathology laboratory; section A or Applied Anatomy; section II	546 Clinical Orientation; section 3 or Obstetrics laboratory; section C or Applied Anatomy; section III	546 Clinical Orientation; section 4 or Obstetrics laboratory; section D or Applied Anatomy; section I	546 Clinical Orientation; section 5

Second Term

February 2-May 16, 1981

Examination period: May 19-28, 1981

<i>Hours</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>
8:00-8:50	564 Large Animal Medicine	564 Large Animal Medicine	Elective or free period	564 Large Animal Medicine	7:45-8:45: 572 Senior Seminar
9:05-11:00	584 Small Animal Medicine and Surgery	584 Small Animal Medicine and Surgery	9:05-9:55: 564 Large Animal Medicine 10:10-11:00: 566 Radiology	584 Small Animal Medicine and Surgery	584 Small Animal Medicine and Surgery
11:15-12:05	565 Large Animal Surgery lecture	567 Clinical Nutrition	565 Large Animal Surgery lecture	520 Preventive Medicine	566 Radiology
1:05-1:55	1:05-6:00: 586 Small Animal Surgery laboratory; section D	1:05-6:00: 586 Small Animal Surgery laboratory; section C	1:05-6:00: 586 Small Animal Surgery laboratory; section B	1:05-6:00: 586 Small Animal Surgery laboratory; section A	565 Large Animal Surgery lecture
2:05-4:25	506 Applied Anatomy; section II or 582 Large Animal Surgical Technique; section C or Elective	506 Applied Anatomy; section I or 582 Large Animal Surgical Technique; section B or Elective	582 Large Animal Surgical Technique section A or Elective	506 Applied Anatomy; section III or 582 Large Animal Surgical Technique; section D	*2:05-2:55: 576 Clinical Nutrition *3:05-3:55: 520 Preventive Medicine

* Schedule as of July 15, 1980. Final schedule will be announced August 29, 1980.

Fourth Year

First Term

September 2-December 10, 1980

Examination period: December 13-22, 1980

Hour	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00-8:50					7:45-8:45: 572 Senior Seminar	Clinics 573 575 577 589 591
9:05-12:35	Clinics 573, 575, 577, 589, 591	Clinics 573, 575, 577, 589, 591	Clinics 573, 575, 577, 589, 591	Clinics 573, 575, 577, 589, 591	Clinics 573, 575, 577, 589, 591	
1:05-1:55						
2:05-4:25	Clinics 573, 575, 577, 589, 591	Clinics 573, 575, 577, 589, 591	Clinics 573, 575, 577, 589, 591	Clinics 573, 575, 577, 589, 591	Clinics 573, 575, 577, 589, 591	

Second Term

February 2-May 16, 1981

Examination period: May 19-28, 1981

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00-8:50	Elective	Elective	Elective	Elective	7:45-8:45: 572 Senior Seminar	Clinic blocks*
9:05-12:35	Clinic blocks*	Clinic blocks*	Clinic blocks*	Clinic blocks*	Clinic blocks*	
1:05-1:55						
2:05-4:25	Clinic blocks*	Clinic blocks*	Clinic blocks*	Clinic blocks*	Clinic blocks*	

* Clinic blocks include major blocks, which last for four-week periods, and minor blocks, which each last two weeks. See p. 37 for a listing of these courses. A lottery system of selection is employed.

Teaching Hospital Rounds

Fall Term

September 2–December 10, 1980

Hour	Monday	Tuesday	Wednesday	Thursday	Friday
7:30–8:00	SAC Patient Rounds Surgery G131	LAC Patient Rounds Medicine Large Animal Clinic	SAC Patient Rounds Medicine G131	LAC Patient Rounds Surgery Large Animal Clinic	7:45 Senior Seminar Auditorium
8:00–9:00	Pathology State of the Art E215	Surgical Pathology Seminar E215		Necropsy Pathology Slide Seminar E215	
9:00–10:00				Infectious Disease Rounds Large Animal Clinic	
12:30–1:00		12:25 Radiology Rounds G131	12:15 Pathology Bottom Line C207	Cardiology G131	Neurology/Ophthalmology Rounds Large Animal Clinic
4:30	Pathology Show and Tell Postmortem Room	Pathology Show and Tell Postmortem Room	Hospital Grand Rounds G3	Pathology Show and Tell Postmortem Room	3:30 and 4:30 Pathology Show and Tell Postmortem Room

Spring Term

February 2–May 16, 1981

Hour	Monday	Tuesday	Wednesday	Thursday	Friday
7:30–8:00	SAC Patient Rounds Surgery G131	SAC Patient Rounds Medicine Large Animal Clinic	LAC Patient Rounds—Medicine G131	LAC Patient Rounds—Surgery Large Animal Clinic	7:45 Senior Seminar Auditorium
8:00–9:00	Pathology State of the Art E215	Surgical Pathology Seminar E215		Necropsy Pathology Slide Seminar E215	
9:00–10:00				Infectious Disease Rounds Large Animal Clinic	
12:30–1:00		12:25 Radiology Rounds G131	12:15 Pathology Bottom Line C207	Cardiology G131	Neurology/Ophthalmology Rounds Large Animal Clinic
4:30	Pathology Show and Tell Postmortem Room	Pathology Show and Tell Postmortem Room	Hospital Grand Rounds G3	Pathology Show and Tell Postmortem Room	3:30 and 4:30 Pathology Show and Tell Postmortem Room



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 Assistant Dean and Hospital Administrator: R. Rostowsky
 Assistant to Director: A. Cheney
 Pharmacy: L. Rivkin
 Medical Records: D. Marquis
 Animal Care Personnel: R. Lawrence
 Small Animal Clinic Director: E. J. Trotter
 Large Animal Clinic Director: K. K. White

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K. K. White

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gerty, K. Oberhansley

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Faculty: R. D. Gleed

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Faculty: P. W. Concannon, R. H. Foote, W. Hansel,
N. A. LaFaunce, K. McEntee, D. P. Sponenberg, A. J.
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Faculty: J. T. Blue, J. W. Boyd, J. S. Nosanchuk

Resident: E. J. Mirro, Jr.

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Pathology: R. M. Lewis, Chief

Interns

Ambulatory Clinic: D. L. Armstrong, G. J. Hickey

Anesthesiology: K. Cox

Large Animal Clinic: S. L. Fubini, G. K. Haibel, B. J.
Haver, C. Wickenden

Small Animal Clinic: R. P. Bierstedt, J. A. Flanders,
N. L. Irby, P. D. Kramper, W. J. Mitchell, Jr.

Library

Whitaker, Susanne K., A.B., M.L.S.; Veterinary Medical
Librarian

Sherwood, Charlene C., Assistant Librarian

Specialists and Technicians

Conklin, Marshall E., Farrier

Hamilton, William P., Medical Illustrator

Hinman, H. Donald, Director, Biomedical Electronic
Service

Johnson, Richard C., Assistant Pharmacist

Lauber, John, Visual Aids Technologist

Reidemanis, Alfreds, Research Technician

Rivkin, Lawrence S., Pharmacist

Ryan, Gerald D., Radiology Lecturer

Smith, Robert F., Director, Biomedical Communications

Standing Committees of the College Faculty

General Committee

D. H. Lein (1979-82), chairman

S. G. Campbell (1978-81)

R. W. Kirk (1980-83)

K. K. White (1979-82)

R. H. Wasserman (1978-81)

Graduate Field Executive Committee

N. L. Norcross, graduate field representative

F. A. Kallfelz (1981)

L. P. Krook, ex officio

F. W. Lengemann (1983)

R. R. Minor (1982)

A. J. Winter (1983)

Admissions Committee

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J. F. Cummings

H. E. Hintz

D. F. Holmes

F. A. Kallfelz

J. E. Lowe

F. W. Scott

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R. A. Corradino

H. Erb

J. Fabricant

R. P. Hackett

H. J. Harvey

K. Hout

R. Minor

E. Pearson

T. Reimers

C. G. Rickard

W. Sack

B. Sheffy

* Student representatives are elected from each class.

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R. Riis

Committee on Student Conduct

S. G. Campbell, chairman

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R. H. Jacobson

G. Lust

D. H. MacCoy

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H. J. Harvey
D. F. Holmes
G. C. Poppensiek
J. F. Timoney
K. K. White

Class of 1983

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A. deLahunta
J. R. Georgi
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R. W. Kirk
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R. C. Riis
C. E. Short
M. C. Smith
D. N. Tapper
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J. F. Zimmer

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B. Cooper
J. H. Gillespie
R. B. Hillman
W. E. Hornbuckle
J. M. King
L. P. Krook
D. M. MacCoy
R. R. Minor
M. C. Peckham
W. S. Schwark
D. F. Smith
B. J. Watrous

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J. F. Cummings
R. P. Hackett
R. H. Jacobson
T. J. Kern
D. H. Lein
D. S. Postle
W. C. Rebhun
V. T. Rendano
H. F. Schryver
F. W. Scott
D. O. Slauson
E. J. Trotter

Committee on Scholarships

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R. W. Kirk
M. C. Peckham
D. S. Postle, ex officio
R. H. Wasserman
A. J. Winter

Committee on Animal Use and Care

R. M. Lewis, chairman
G. R. Bolton
J. E. Gilmartin, ex officio
D. D. McGregor
F. W. Quimby, ex officio

Committee on College Library

J. Fabricant, chairman
J. R. Georgi
R. H. Jacobson
W. O. Sack
M. E. White

Faculty Council of Representatives

E. L. Gasteiger (1980-83)
F. A. Kallfelz (1979-82)
F. W. Scott (1978-81)
B. E. Sheffy (1978-81)
D. F. Smith (1980-83)

Pharmacy and Therapeutics Committee

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D. M. MacCoy
W. C. Rebhun
R. Rostowsky, ex officio
W. S. Schwark
M. White

SUNY Senate

G. Lust, senator

Special Committees 1980-81

Seventy-third Annual Conference for Veterinarians

January 21, 22, and 23, 1981

R. Dueland, chairman
G. L. Cockerell
R. P. Hackett
W. E. Hornbuckle
R. C. Riis
C. E. Short, ex officio

Senior Seminar Committee

D. S. Postle, chairman
R. Dueland
H. Erb
R. B. Hillman
W. C. Rebhun
J. F. Zimmer

Biohazard Safety Committee

G. L. Cockerell, chairman
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R. A. Corradino

G. M. Dunny
C. G. Rickard, ex officio
J. C. Thompson, Jr.

Computer Advisory Committee

A. deLahunta, chairman
J. N. Davidson
H. Moraff
C. G. Rickard
D. N. Tapper

Student/Faculty Liaison Committee

Student representatives and faculty members are elected by the student body in the fall. One student serves as chairperson. Membership lists will be circulated at that time.

Graduate/Faculty Liaison Committee

Graduate students select the committee.

Note: A short summary report of the special committees should be given to the secretary of the college in April for transmittal to the faculty at the time of the faculty meeting in May.

Cornell Chapter of S.C.A.V.M.A., 1980-81

President: Peter Davis, class of 1982
Vice President: Ann Corbisiero, class of 1982
Secretary: Susan Kirschner, class of 1983
Treasurer: Elaine LaForte, class of 1982
Faculty Advisers: Dr. Charles Short and Dr. Donald Smith

Graduate Students Association

The association of graduate students at the College of Veterinary Medicine is an organization designed to provide a change of pace from the graduate students' rigorous schedule. Various social functions, an annual seminar, and other informal gatherings are all part of the association's calendar. The officers are Sharon Crowell-Davis, president, and Paige Smith, secretary-treasurer.

Students

Graduate Students, Spring 1980

Allhands, Roger, B.S., D.V.M.; Illinois
Ashfaq, Mohammad, B.V.M., M.S.; Pakistan
Baldwin, Charles A., B.S., D.V.M.; Massachusetts
Baldwin, Cynthia, B.A.; New York State
Brownie, Cecil, B.Sc., D.V.M.; Jamaica
Bunch, Susan E., D.V.M.; Indiana
Chandiwana, Stephen, B.Sc.; Zimbabwe
Conner, Margaret, B.S., M.S.; Virginia
Crowell-Davis, Sharon, D.V.M., Tennessee
Demson, Martha V., D.V.M., New York State

Desiderio, James V., B.S., M.S.; New York State
Dueland, David, B.A.; New York State
Edwards, John F., B.A., D.V.M., New Hampshire
Fabisiak, James P., B.S.; New York State
Fairbrother, John M., B.V.Sc.; Australia
Fasina, Solomon O., D.V.M., Nigeria
Frelief, Paul F., B.S., D.V.M.; California
Gametchu, Bahiru, D.V.M., M.S.; Ethiopia (in absentia)
Gelberg, Howard B., D.V.M.; New York State
(in absentia)

Gleeson, Lawrence, B.V.Sc., M.V.Sc.; Australia
Griffith, Irwin J., B.A., M.S., California
Gunther, Roland, B.S., D.V.M., California
Han, Hai-Luen, B.V.M., Taiwan
Hudson, Lola C., B.S., D.V.M.; Tennessee
Jones, Kevin F., B.S., M.S.; Pennsylvania
Kim, Myung Kyung, B.S.; Korea
Landicho, Elito F., D.V.M., Philippines
Langweiler, Marc H., B.S., D.V.M., M.S.; New York State
Lay, John C., B.S., D.V.M., Missouri
Lettieri, Gerald A., A.B., New York
Lumsden, Winston F., B.S., D.V.M., M.P.H., M.Ed., EdS.; Alabama

Maala, Ceferino P., D.V.M., M.V.Sc.; Philippines
McDonough, Patrick, B.S., M.S.; New York State
Meunier, Paul C., B.S., D.V.M.; New York State
Miller, Richard B., B.Sc., D.V.M.; Canada
Murphy, Elizabeth, A.B.; New York State
Opdebeeck, Joan P., M.R.C.V.S.; Ireland
Panangala, Victor S., D.V.M., M.S.; Sri Lanka
Seiler, Robert, B.V.Sc., Dipl.Path.; Australia
Shek, William, D.V.M., M.S.; New York State
Sigler, Michael, B.S.; New York State
Skrabalak, Dale S., B.S.; New York State
Smith, Paige N., B.S., D.V.M.; Texas
Southard, Laurel, B.S.; New Mexico
Stoddart, Cherylé, B.S.; Connecticut
Swanson, Robert N., B.S., M.S.; New York State
Wade, Susan E., M.A., B.A.; New York State
Weiss, Richard C., B.S., V.M.D.; New York
Wimberly, Harry C., D.V.M.; S. Carolina
Wolfe, Marilyn J., B.A., D.V.M.; Ohio
Wolski, Thomas R., D.V.M.; California
Youngren, Susan D., B.A.; Virginia
Zeman, Leslie B., B.S., D.V.M.; New York State

Fourth Year, Class of 1981

Note: Those cities not followed by the name of a state are in New York State.

Adsit, Jane C., Baldwinsville
Bachman, Diane, Huntington
Barta, Mary A., Washington, New Jersey
Bates, Wendy A., Rochester
Bloomquist, Charles R., Baldwinsville
Brewster, Dennis M., Ithaca
Brooks, Marjory B., Utica
Brothers, Sherry L., Ithaca
Bucki, Barbara M., West Seneca
Budik, Louis, Kenmore
Chase, Thomas H., Keene, New Hampshire
Christiansen, Daniel J., Warren, New Jersey
Clark, David M., Ithaca
Covell, Sally J., Granby, Connecticut
DeVenne, Charles D., Fairport

Edinger, Harold C., Trumansburg
 Elbert, Oliver, Dobbs Ferry
 Feldman, Jean F., Hamburg
 Garry, Franklin B., East Berne
 Goldfarb, Iris L., Bronx
 Gray, James A., Oakfield
 Gutlaizer, Arnold S., Amityville
 Hamilton, Robert D., Lockport
 Hanson, Christopher H., Valhalla
 Henry, Donna J., New Haven, Connecticut
 Higgins, Florence M., Queens Village
 Hoyns, Heather K., Wyckoff, New Jersey
 Jensen, Lisa I., Mount Vernon
 Kagan, Candace B., Bangor, Maine
 Kates, Eric H., Kerhonkson
 Kramek, Betty A., Staten Island
 Lankenau, Cynthia J., Cossackie
 Lanza, Noreen D., Southington, Connecticut
 Leiman, Daniel H., Elmont
 Leja, Jo-Anne M., Chicopee, Massachusetts
 Lesser, Frederick R., Big Flats
 Levine, Susan A., Ithaca
 Levy, Jeffrey, Yorktown Heights
 Lovisa, Elise M., Pelham Manor
 Lynk, Thomas W., Sharon Springs
 McEvoy, Elizabeth O., Bangor, Maine
 MacKellar, Ian J., Lyons Falls
 Meixell, Sarah L., Trumansburg
 Meyer, Linda J., Far Hills, New Jersey
 Meyers, Claudia E., Syosset
 Michaels, Ian C., Manhasset
 Miller, Burton D., Great Neck
 Norman, Susan, Saranac Lake
 Ohm, Stephen P., Acra
 Padilla, Mary, Pleasantville
 Patterson, Jon S., Westwood, New Jersey
 Perdrizet, John A., Bethel, Connecticut
 Polak, Donna M., Briarcliff Manor
 Powers, Michael S., Milford
 Purdy, Stephen R., Ithaca
 Radin, M. Judith, Johnson City
 Richter, Keith P., St. James
 Robb, Edward J., Massapequa
 Ross, Michael W., Chestertown
 Saloom, Helen G., Boxford, Massachusetts
 Saltman, Roger L., Prattsburg
 Schutzman, Howard, Elmont
 Simons, John W., St. Johnsbury, Vermont
 Stewart, V. Ann, Providence, Rhode Island
 Tasillo, Susan A., Andover, Massachusetts
 Thompson, Belinda S., Ithaca
 Tintle, Dean G., Pompton Lakes, New Jersey
 Tseng, Florina Sze-Fong, Silver Spring, Maryland
 Valentine, Beth A., Northport
 Wachter, Allen F., Callicoon
 Watson, Lorraine A., New York
 Weiss, Linda J., Hamden, Connecticut
 West, Gerald A., Seneca Falls
 Wickes, Mary Ann, Ithaca
 Williams, Douglas A., New York
 Wilson, Sheila A., Huntington Station
 Wolfe, Eileen M., Rochester
 Wygal, Barbara B., Ithaca
 Yancey, Samuel P., Glenfield
 Zdrojewski, Juliane, Marilla

Third Year, Class of 1982

Anderson, Karen B., Hartsdale
 Bayan, Gregory P., New Brunswick, New Jersey
 Bell, Jerold S., Teaneck, New Jersey
 Bernbaum, Marjorie A., West Newton, Massachusetts
 Bertone, Alicia L., Ithaca
 Black, Paul R., Pittsford
 Bressett, John D., Dryden
 Bulkley, Steven L., Norwich
 Burroughs, Barbara J., Essex Junction, Vermont
 Carberry, Carol A., New Milford, New Jersey
 Cary, Michael F., Salem
 Clauss, John S., Orchard Park
 Corbisiero, Ann T., Cobleskill
 Davis, Peter P., Augusta, Maine
 DeTone, Karen R., Bronx
 Diamond, Ted A., Clifton, New Jersey
 Farrell, Peter W., Brooktondale
 Feldman, Alan B., Smithtown
 Feldman, Steve C., Rockaway Park
 Fingerroth, James M., Forest Hills
 Fischer, Andrew T., Short Hills, New Jersey
 Fishman, Jane E., Cheshire, Connecticut
 Freer, Ann M., Guilford
 Gittelman, Howard J., Ithaca
 Green, Alan E., Valley Stream
 Henninger, Richard W., Kirkwood
 Ivin, Karen, Berkley Heights, New Jersey
 Jamison, Jeffrey M., Canisteo
 Johnson, Carl K., Troy
 Johnson, Cricket, Hensonville
 Johnson, Peter J., Bronx
 Jordan, Mark T., Cortland
 Kalaher, Kathleen M., New York
 Kay, Alan D., Ithaca
 Kay, Nancy D., Denver, Colorado
 Krasnoff, Jeffrey K., Syosset
 Krick, David W., Baldwin
 LaForte, Elaine M., Delmar
 Leids, Pepi F., Dix Hills
 Lightcap, Priscilla A., Garden City
 Lodge, Mary B., Wilmington, Delaware
 McFarland, Marianne, Falmouth, Massachusetts
 McNamara, Tracey S., Forest Hills
 Maus, Richard W., New City
 Meric, Susan M., Fairfield, Connecticut
 Mix, Barbara L., Horseheads
 Moll, Kerrie J., Greenlawn
 Norris, Kerry S., Auburn
 O'Horo, Mary T., Canton
 Olkowski, William F., Fanwood, New Jersey
 Olsen, Christopher W., Saratoga Springs
 Orsini, Paul G., Eastchester
 Paul-Murphy, Joanne R., Huntington Station
 Payton, Alice J., Morris
 Phillips, Thomas R., Ithaca
 Pinello, Christine B., Hauppauge
 Bach, Michael P., Wantagh
 Robinson, Michael P., Harrison
 Rogatz, William P., Roslyn Heights
 Ross, Christina N., Mountaintville
 Rowe, Robert H., Ithaca
 Saslow, Neal J., Little Neck
 Scavelli, Thomas D., Brooklyn
 Seblink, Gregory L., North Clymer

Shakespeare, Anne L., Setauket
 Sheldon, Helen C., Thompson, Pennsylvania
 Stewart, Kay A., Washington, Connecticut
 Teare, John A., Ithaca
 Tomkiewicz, Donna J., S. Grafton, Massachusetts
 Tulis, Michele R., New Hyde Park
 Vaughan, Corisse N., Ithaca
 Wallingford, Susan R., West Nyack
 Warner, Ann M., Wayland
 Weinberg, Carolyn M., Weston, Massachusetts
 Wentorf, Laine E., Valatie
 Williams, Jeffrey A., Ithaca
 Winn, Steven S., New York
 Zancope, Marco N., White Plains
 Zola, Lawrence A., West Hartford, Connecticut

Second Year, Class of 1983

Abells, Gail R., South Orange, New Jersey
 Baldwin, Jay L., White Plains
 Barnwell, Richard W., Bronx
 Beilman, Wayne T., Ithaca
 Bergman, Andrea, Brooklyn
 Bertone, Joseph J., Ithaca
 Bird, Jacqueline, Port Jefferson
 Brooks, David W., Pittsford
 Burton, Stephen C., Ithaca
 Butler, Julie R., New Rochelle
 Carls, Sheryl H., Liverpool
 Clark, Evan R., Westbury
 Cottrell, Colleen A., Orchard Park
 Davies, Christopher J., Freeville
 Davis, W. Bradley, Vestal Center
 Dodge, Kenneth R., Ithaca
 Doran, Richard E., East Brunswick, New Jersey
 Doyle, Lorraine A., Massapequa
 Dubensky, Richard A., Ithaca
 Dwyer, Ann E., Manlius
 Elwell, James T., Harwinton, Connecticut
 Factor, Donald C., Coram
 Fahnestock, Glenn R., Ithaca
 Faulkner, Lewis W., Sparrowbush
 Flinkstrom, Carl E., Fitchburg, Massachusetts
 Fortner, Jay H., Baltimore, Maryland
 Gex, Frances A., Greenwich, Connecticut
 Haag, Ellen L., Sidney
 Handelsman, Caryl T., Westbury
 Hartzband, Lori E., Westport, Connecticut
 Heaney, Kathleen, Rutherford, New Jersey
 Henrickson, Robert, Manhasset
 Hensen, Susan, East Aurora
 Jones, Lucy B., Ithaca
 Jurgielewicz, Joseph L., Moriches
 Kates, Maura E., Kerhonkson
 Kibiuk, Alexandria V., Holland Patent
 Kidney, Jay K., Clinton, Connecticut
 Kirby, Timothy A., Sidney Center
 Kirschner, Susan E., New York
 Kraai, Peter M., Fairport
 Krausman, Faith J., Binghamton
 Leuchtenberger, Mary J., Islip
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 Lovelock, Robin L., Rochester
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 Manobla, David W., New York

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 Murphy, Christopher, Freeville
 Neiley, Andrea A., Dryden
 O'Keefe, Andrea, Dix Hills
 Paine, James L., Strafford, New Hampshire
 Pankowski, Richard L., Jersey City, New Jersey
 Peyrot, Louise M., Glastonbury, Connecticut
 Phalen, David N., Wilmington, Delaware
 Pion, Paul D., New Hyde Park
 Pollack, Michael J., Jericho
 Powell, Cynthia C., Stony Brook
 Quintal, Barbara J., Pennellville
 Rudenberg, Paul G., Beverly, Massachusetts
 Ryan, Anne M., Dunellen, New Jersey
 Sandefer, David G., Verona
 Schott, Thomas F., Smallwood
 Schulman, Alan J., New York
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 Shapiro, Ellen D., Wilmington, Vermont
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 Simpson, Daniel F., Tiverton, Rhode Island
 Smith, Francis W., Lexington, Massachusetts
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 Watts, Peter D., New York
 Whiteford, Anne L., Wassaic
 Windecker, Debra A., Frankfort
 Woodworth, Norman C., Lyndonville

First Year, Class of 1984

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 Brown, Cynthia, Stuyvesant
 Brummer, David, Manhasset
 Bushmich, Sandra, Ithaca
 Butt, Mark, Woodsboro, Maryland
 Button, Marlene, Rushville
 Cain, Ronnie, Greenwood, Delaware
 Campbell, Doris, Ithaca
 Cape, Lysanne, Fairport
 Crossman, Robin, Rutland, Vermont
 Dennett, Debra, New York
 Deppen, Debra S., Plainfield, New Jersey
 Eagle, Mary, Massapequa
 Edwards, Lisa, Freeport, Maine
 Ehrhardt, Eric, Warren, New Jersey
 Fallon, Lynne, Wilmington, Delaware
 Fallon, Timothy, Chester
 Feibusch, Karen, New York
 Garrett, Linda, Rensselaer
 Gill, Thomas, Binghamton
 Giusti, Susan, Stanford, Connecticut
 Graulich, Joan, Sharon Springs
 Hall, Kathleen, Ithaca
 Hanlon, Natalie, Pleasant Valley
 Isaac, Jan, Eggertsville
 Kearney, David, Garden City
 Keenan, Daniel, Irvinston
 Kiklevich, J. Veronika, Kinderhook

Kolb, Gerard, Rochester
Labuszewski, Teresa, Sound Beach
Liddell, Warren, Albany
Linn, Kathleen, Lakewood
Lister, Sarah, Westbury
Lowenthal, Peter, Valley Stream
McKenzie, Geoffrey, Darien, Connecticut
McTigue, Michael, Rochester
May, Laura, E. Northport
Meyer, Todd, Cheshire, Connecticut
Mitchell, Thomas, Ithaca
Morrison, Susan, E. Greenbush
Nelson, Pamela, Morrisville
Nolte, Susan, Schuylerville
Norton, Bonnie Lee, Canton
Ochrymowych, Christina, New Providence, New Jersey
O'Neil, Shawn, Little Falls
Opperman, Diane, Great Neck
Ostrum, Peter, Califon, New Jersey
Payne, Anne L., Canandaigua
Pepper, Carol, E. Northport
Price, George S., Holliswood
Raleigh, Kimberly, New York
Ramirez, Iris, Brooklyn
Reichenstein, Allan, Maplewood, New Jersey
Ricker, Stephanie, Upper Montclair, New Jersey
Rooney, Monica, Sunapee, New Hampshire
Rubin, Dale Sue, Flushing
Scheffler, Barbara, Snyder
Schroeder, Henry, Ithaca
Schutzengel, Daniella, Ridgewood, New Jersey
Shing, Jerald, Ithaca
Shoulberg, Nina, Bronx
Smith, Kathryn, Geneva
Sorresso, Giovanna, New York
Spindel, Edward, Hicksville
Tashjian, Joseph, Newfield
Tenney, Laura, Ithaca
Thompson, Donald, Ogdensburg
Tolchin, Patricia, Binghamton
Tucker, Geoffrey, Ithaca
Tupac, Gail, Bethesda, Maryland
Turillo, Lucia, Ithaca
Waters, David, Harrisburg, Pennsylvania
Weinberger, Laura, Clinton, Pennsylvania
Wiltse, Darice, LaGransville
Wimsatt, Jeffrey, Ithaca
Wolff, Peregrin, Middlebury, Vermont
Wopperer, Mary, Snyder



Cornell University

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List of Announcements

Following is a list of *Announcements* published by Cornell University to provide information on programs, faculty, facilities, curricula, and courses of the various academic units.

Agriculture and Life Sciences
College of Architecture, Art, and Planning
College of Arts and Sciences
Graduate School of Business and Public
Administration
Engineering at Cornell
Graduate Study in Engineering and Applied Science
General Information*
Graduate School
School of Hotel Administration
College of Human Ecology
School of Industrial and Labor Relations:
ILR Cornell
Graduate Study at ILR
Law School
Medical College (New York City)
Graduate School of Medical Sciences (New York
City)
Officer Education (ROTC)
Summer Session
New York State College of Veterinary Medicine

* The *Announcement of General Information* is designed to give prospective students pertinent information about all aspects and academic units of the University.

In addition to the Announcements listed above, the University publishes a master catalog of University courses, *Description of Courses*, and a handbook for enrolled students, *Academic Information*.

Requests for the publications listed above should be addressed to

Cornell University Announcements
Building 7, Research Park
Ithaca, New York 14850
(The writer should include a zip code.)

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